

VOLUME XI

NUMBER 1

The A.T.A. Magazine

OFFICIAL ORGAN OF THE ALBERTA TEACHERS' ALLIANCE, INC.

MAGISTRI NEQUE SERVI



SEPTEMBER, 1930



Retired Pay Systems for Public School Teachers

FOR no group in the social order is there greater need for a system of retired pay than for public school teachers. The overwhelming majority of these in the United States are women. The public school teacher renders to the state a service as important as that rendered by any other profession engaged in public service. A reasonable and sound system of retired pay is essential to the improvement and effectiveness of public education.

* * * * *

The fact that no public school teachers' retirement system can be regarded as ideal, and that every system now in operation imposes compromises, rendered advisable or unavoidable by the necessity of adjusting ideal provisions to personal and economic conditions, should not obscure the fact that in the past twenty-five years statewide teachers' retirement systems have been constantly becoming more sound. In no other calling, or in respect to no other professional group, is the development of adequate provision for retirement so heartily to be commended."

(From Bulletin Number 25, The Carnegie Foundation for the Advancement of Teaching—*The Social Philosophy of Pensions*, by HENRY S. PRITCHETT.)

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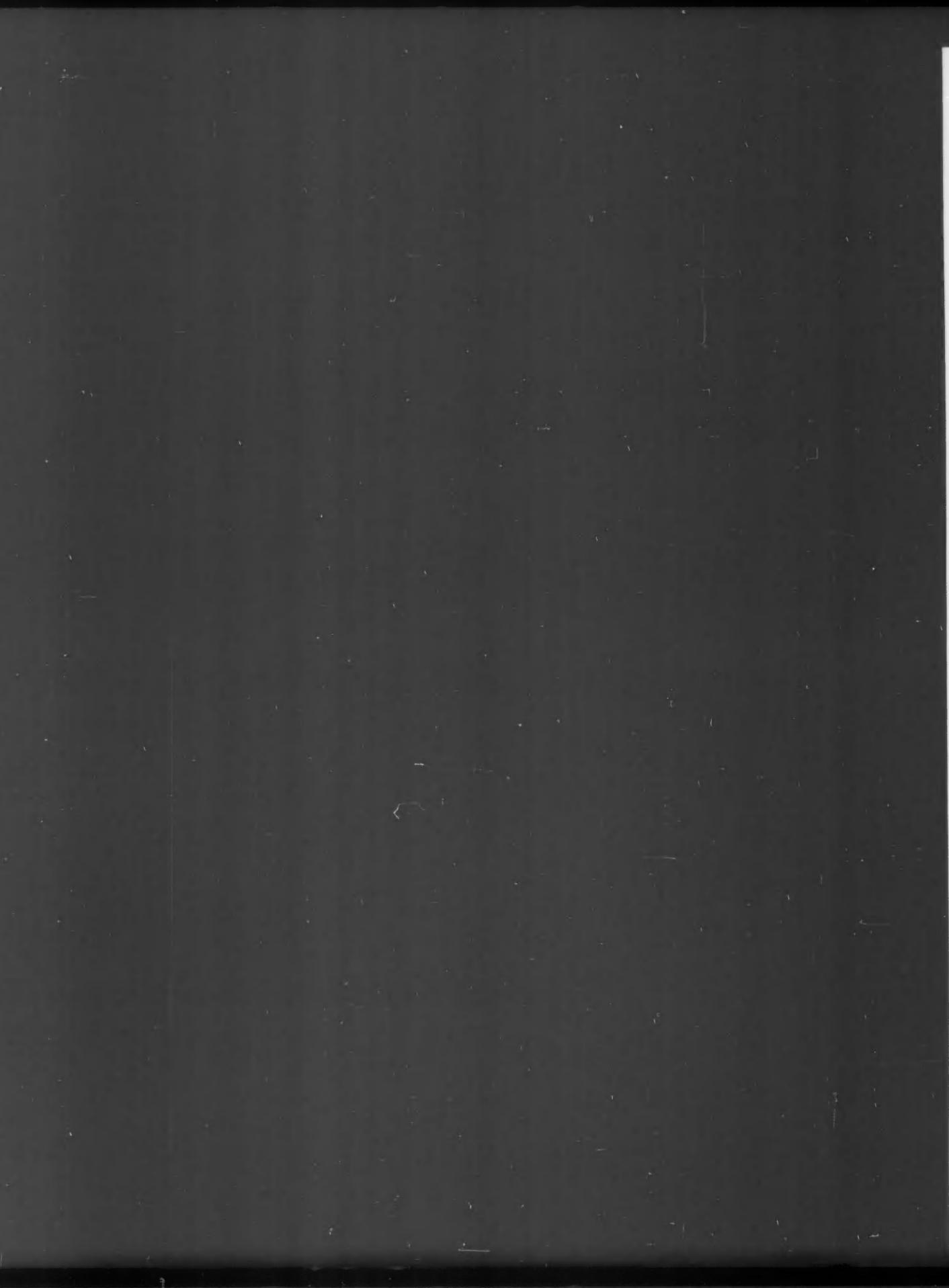
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VOL. XI

EDMONTON, SEPTEMBER, 1930

No. 1

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Canadian Teachers' Federation Officers, 1930-31



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Looking Back on the Eleventh Annual Conference of the Canadian Teachers' Federation

Interesting Points From the Conference Handbook

The reported memberships are as follows:

P.E.I.	445 Full Members, and 244 Provisional.
Nova Scotia	1029 plus large recent returns.
New Brunswick	832 Full Members and 85 Provisional.
Quebec (Protestants)	1361
Ontario Secondary	2901
Ontario P.S.	—
Ontario Women	—
Manitoba	1906 Full Members and 720 Provisional.
Saskatchewan	1901 " " " 558 "
Alberta	2412 " " " 515 "
British Columbia	2135

It is to be regretted that we have not complete returns; those here given, however, should afford keen satisfaction to the rabid Albertan. With the exception of Ontario, where closer settlement and greater centralization of population make signing up much easier, we have the largest organization of teachers in the Dominion. Let those who feel keenly the discouragements which they meet in promoting the growth and ideals of the Alliance, read these figures and take heart.

* * * * *

The teachers of P.E.I. are not yet able to report concrete progress. The Report of the Royal Commission which investigated educational conditions was not dealt with at the 1930 session of the Legislature—reading the story of the teachers' negotiations with the government one gathers an impression of rather undignified "stalling," of "waiting for something to turn up." The content of the Report is not before us, but we see that among other things is recommended that books be sold at half price to teachers in one-room schools—a bit of ridiculous patchwork which, we hope, is not characteristic of the Report. Well, the government has decided to hold a plebiscite in order to ascertain the popular will with respect to educational reforms, and the P.E.I.T.F. is doing its best to keep the salary question from being thrown to the lions in this way. Before passing on, we may recall once more that the average teacher's salary in the Island is \$547 while the cost of living is not much less than our own.

* * * * *

Nova Scotia is looking forward to the not-far-distant day when it will have a full time Secretary-Treasurer.

Concerning recent regulations of the Council of Public Instruction we read the following: "There is also a provision under special conditions to sections who open for the first time a department in either mechanical or domestic science or both. The department will pay half the cost of the installation of the equipment required for the teaching of mechanical or domestic science. The maximum amount to be paid for mechanical science equipment is \$500 and for domestic science equipment \$500." Flat grants of \$250 per annum are offered also for the employment of specialists in art, music and teaching of retarded children.

* * * * *

There is a fluttering in the dovecotes of *New Brunswick*. When a delegation of the N.B.T.A. Executive met Premier Baxter with a number of progressive suggestions, "it was intimated that the government had in mind appointing a Commission to investigate the status of Education in N.B., to consider the matter of greater government assistance to poorer rural districts, larger units of school assessment and administration, and the equalizing of assessment for school purposes throughout the Province." Provision was made at the session of the Legislature for the appointment of the Commission but it has not yet been appointed.

* * * * *

Quebec P.A.P.T. reports the coming of Prof. F. Clarke to McGill, as Professor of Education. "An important definite result of Prof. Clarke's coming to Montreal has been the revival, at McGill University, of a post-graduate course leading to an M.A. in Education, and the offering of four \$500 scholarships to teachers taking that course."

* * * * *

The F.W.T.A.O. (*Ontario women teachers*) report that, "realizing that organization work will be with us for many years, we have decided that the engaging of a full-time field secretary would be the best means of overcoming our difficulties along that line."

The sign-up of normal students has been better than ever before. The teacher-supply is coming back to a healthy state. The Federation has asked that the Department appoint a commission to undertake a survey of Education in Ontario, with Department, Trustees' Association and Teachers' Federations co-operating.

* * * * *

Outstanding in the *Ontario S.S.T.F.* report are the following paragraphs:

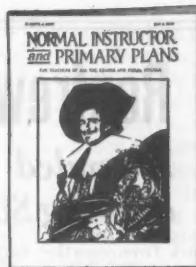
THE EXAMINATION PROBLEM

Proposed plans to modify our present system of Matriculation examinations have caused widespread and keen discussion. A report of a committee of the Ontario University Conference suggested that, whenever a student is recommended by his teacher in a subject at 66 per cent or more, he be given his certificate by the Department of Education without the necessity of writing the final Departmental paper.

The Provincial Council of our Federation and also the College and Secondary School Section of the Ontario Educational Association have requested the Ontario Department of Education to delay the application of this scheme until it has been thoroughly considered and discussed by the teachers of the Province.

The value of the New Type or Objective form of examination is also being carefully investigated. During the month of May sample papers in seven of the Matriculation subjects were sent to our

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[A. T. A.—Sept.]

Date 193.....

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schools. We were requested to have a limited number of our students write these and then return the answer papers to the Department of Education. Evidently they wish to test the co-relation existing between these and the older form of examinations. If the New or Objective Type should prove more satisfactory, they may be substituted.

We are glad also to note that the Ontario people are definitely planning to inaugurate in October an Education Week such as "has been successfully worked out in Great Britain, Alberta and other parts of the Empire," with a view to creating public opinion favorable to their expanding educational programme.

The *Ontario P.S.M.T.F.* (men teachers) submit the following information which goes to show how far we have to travel in the matter of pensions, and how far astray must be the allegations of "actuarial unsoundness" quoted against the Ontario scheme (amongst others) in our Legislature last spring. (In the discussion at the conference, Ontario delegates said that the highest authorities had pronounced favorably upon the actuarial aspects of their scheme; it had actually been found possible to increase the benefits.)

SUPERANNUATION

During the year we have been very active in an endeavor to strengthen our Superannuation scheme by making it possible for a teacher, on reaching the retiring age, to have his pension converted into a joint pension, payable to last survivor. That the Federation Executive has been able to persuade the Commission that this course is right, is seen in their annual report, in the following extract:

"Another proposal has been received whereby pensions may be converted into joint pensions payable to last survivor, and that teachers may make voluntary contributions of 1½ per cent or 2 per cent into the present fund so as to increase the joint pension. The Commission views this proposal with favor but is of the opinion that it should be made applicable to women teachers as well as men."

* * * * *

Manitoba T.F. The Teachers' Retirement Fund Act has been amended so that the government participates. When the Act was first passed teachers were given the choice of contributing or not contributing. This choice has now been withdrawn. The government undertakes to double the pension payable from the fund contributed by the teachers.

High lights of the new Manitoba Schools Act are: provision of Cumulative Sick Pay up to sixty days; provision for the setting up of salary schedules; Library grants increased from ten to fifteen dollars per room per year for rural schools.

Of interest to trustees and teachers alike in Alberta is the resolution of the Manitoba Trustees' Association in conference, requesting the government "to bring forward for consideration a scheme of school administration which will provide for every child in the Province equal opportunity for education and which will distribute the cost of education equitably on all citizens and corporations and all sources of wealth in the Province." Can Manitoba throw any useful light on that vexed problem?

* * * * *

Alliance membership is growing steadily in Saskatchewan. For the last four years the figures are 850, 1,790, 2,144, 2,463. This remarkable progress, which has been paralleled by a great advance in legislative work in education, began immediately after the secondary and elementary teachers closed their ranks, appointed a full time organizer, and got down to business. This year they are able to report the achievement of a Superannuation Act which begins to pay pensions after January 1st, 1931.

* * * * *

Of the long and interesting *B.C.T.F.* report we can only make one extract here, dealing with a plan of group insurance designed to complement the protection given by the Pensions scheme of that province. As is well known, the benefits of a Superannuation scheme are necessarily very small during the early part of a teacher's career (in the event of death or disablement). So the group insurance plan recommended in B.C. "differed materially from the ordinary form of group insurance inasmuch as the premium remained constant at all ages, while the benefit reduced as the age increased. This was considered beneficial, first because of the simplicity of the Federation's work of collecting and accounting, and secondly, because it fitted in with the actual needs of the teachers.

"The actual working out was as follows:

Ages	Annual Premium		Amount of Insurance	
	Male	Female	Male	Female
Up to 29	\$18.00	\$9.00	\$2,750.00	\$1,375.00
30-39	18.00	9.00	2,400.00	1,200.00
40-44	18.00	9.00	2,000.00	1,000.00
45-49	18.00	9.00	1,580.00	790.00
50-59	18.00	9.00	1,000.00	500.00
60-64	18.00		525.00	

NOTE.—Female teachers retire at age 60, as provided under section 25 of the Teachers' Pension Act.

"Unfortunately, the teachers generally did not support the plan, but in the city of Vancouver, the Principals and Vice Principals obtained the requisite percentage, and are now covered by this insurance. It will be granted in other districts if the necessary percentage is obtained."

C.T.F. Convention Impressions

BY M. W. BROCK, B.A., CALGARY

THE field of educational advancement with all its related opportunities of specially co-ordinating the new findings of educational research with the sound principles of correct spelling pedagogy has now been fully opened in Canada. The time has come when the humblest instrument of enlightenment may partake in the discussion of national educational problems and with the dignity and poise of a technical expert offer his criticisms, his constructive suggestions, and even indulge in prophetic ecstasies, without calling down upon his head the anathema of those who previously were regarded by all and sundry as the only sufficient authority and source of expert educational knowledge.

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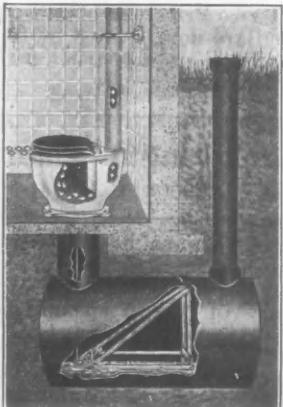
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FROM SEA TO SEA

was a vision which emboldened the purposive efforts of a few Western educationalists a mere decade ago. Then, like the great movement of Confederation, which found its consummation in the political unity of many far-flung pioneer settlements of this new land, so, beginning as an ideal there exists today in Canada an organization of national scope that will finally bring into harmonious relations the great diversified practices of educational endeavor.

Then only shall have been achieved that instrument of national progress which can fully develop in this country, out of the heterogeneous elements of our national life, a real Canadian spirit and national consciousness. All honor, I claim, should be theirs, who turned the first furrows in this great educational enterprise, the Canadian Teachers' Federation.

Alberta was at its best during the period July 14th to 17th, when the Eleventh Annual Conference of the C.T.F. met, first at Calgary, then at Edmonton, and finally at Jasper. Official delegates to the number of three from each province answered the roll-call on the opening morning of the convention, when the president, C. N. Crutchfield, B.A., of Shawinigan Falls, Quebec, called to order the first session in the Council Chamber of Calgary's *Hotel de Ville*. Here the conference received the first of a series of official greetings from Hon. Perren Baker, who welcomed the delegates in behalf of the Alberta Provincial Government and his own department. Dr. A. B. Singleton then brought greetings and well-wishes from the Calgary School Board and in behalf of the City of Calgary. These felicitations spoken in great sincerity furnished the best possible conditions for the undertakings of the convention.

Just here may I state that never have I observed in all the conferences I have attended, a finer spirit of keen, sympathetic, yet searching interest that was always dignified and without cavil. Every problem that was debated was approached in a grave parliamentary manner, at times enlivened by some humorous thrust, but never trivially regarded or set aside until some positive finding or suggestions were formulated bearing upon its solution or its distinct relation to the problems before the convention. If anyone should doubt the authenticity of such a statement let him attend this major of educational conventions, note the efficient organization and despatch with which all business is conducted, and be forever convinced.

Now in referring to the constitution of this Federation of Canadian teachers I find it reads thus:

"The objects of the C.T.F. shall be to obtain co-operation and co-ordination of all provincial teachers' organizations upon policies and activities of common interest; and to provide means for the ready exchange of information of mutual interest to the affiliated units."

It is my firm conviction that the specific objects as defined by the constitution, namely, that of co-operation and co-ordination on all matters of educational policy, are being conscientiously carried out, year by year, in the annual meetings of the organization. As one who has attended as a delegate for the first time, and who has become supremely enthused in its potential possibilities, I was astounded at the great variety of subjects under surveillance and claiming the attention of this convention, all of

which are vital to the future of education in Canada. For we must always keep in touch with the best in educational progress.

I shall just refer briefly to two of the many reports dealt with in either closed or open session of the Conference, namely, that of "Examinations" and "Survey of Teaching of English." The former report, which I believe is to be made available through the medium of the Federation's 1930 Year Book, is a most comprehensive document, and one worthy of the closest study by departments and teachers alike in connection with this problem. It was compiled by a special Examinations Enquiry Committee of the Alberta Teachers' Alliance under the chairmanship of Mr. Morrison Watts of Calgary. In the scope of this report there has been made available in easy readable form, the findings of the International Conference on Education, held at Elsinore, Denmark; a review of the English Investigations of 1929, and their plans for 1930; an introduction to the new systems of testing with a treatise on Standard and Objective tests; and finally it deals with the problem as to the degree of elimination which should rightly be effected in the curtailment of departmental examinations. In closing, the committee has recommended that every provincial organization appoint committees on Examinations and that from the surveys made, and future discussions, some sound policy be soon evolved.

A survey of "The Teaching of English," undertaken by the P.A.P.T. of Quebec, has led to the formulation of a list of study problems in connection therewith, such as: Silent reading and its relation to problems of training students in independent study; the relation of written to oral English; the relation of an extensive course in English to external tests and examinations, etc., etc. Here, again, great good will surely come when the findings of the different provinces have been completed and related into a compendium of educational principles covering this research subject.

Thus the opinion generally abroad to the effect that all teachers' organizations were being maintained only to effect better salary schedules for their respective memberships and to embarrass departments of education and school boards in respect to contract and tenure problems must now be forever dispelled. While it is true that the salary problem will remain a contentious matter until salaries are properly adjusted to meet the just demands of an underpaid profession, yet the undertakings of the affiliated alliances in the matter of research for the coming year entirely indicate the contrary to be true. In fact a survey of salary conditions undertaken by the Manitoba Provincial Alliance is only one of a great many undertakings definitely agreed upon during the present year, the reports of which will be received at next year's Confederation meeting already arranged to take place at Fredericton and St. John, N.B. I recall that definite assignments involving extensive surveys were allotted to the different provincial organizations for the ensuing year. Such an educational problem as that of "The Larger Administrative Unit" is being definitely studied by Alberta, Manitoba and Quebec organizations, while experiences relating to it are being contributed by the provinces where any such units already prevail. A really constructive new system of administration will surely result if these findings are allowed to have a bearing on what we as teachers feel to be a

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pressing need, namely, the replacing of an obsolete system of rural administration through local school boards by a more modern, larger administrative unit. Again the problem of Canadian textbooks for Canadian schools is one that merits the scrutiny of the Federation. British Columbia has already begun such a survey and is to lead the way, assisted by any other organizations directly interested in the matter. The problem of technical education, of examinations, of methods in English, of publicity in respect to the general enlightenment of the public towards educational problems, are all being wholeheartedly undertaken for the good of the cause. Security of tenure is still a vexatious problem, particularly in these Western provinces. It is one which merits the sympathetic consideration of every provincial department of education in order to do away with so many glaring cases of rank injustice in this respect. New Brunswick appears to lead all other provinces in providing a reasonably just security of tenure for teachers. Thus as it were the whole affiliated body of Canadian teachers becomes in effect a most complete national research and consultative educational body, eager to make a tangible contribution to the great cause of education in Canada.

As an observer of the manners and habits of that aggregation of harassed humans commonly known as teachers, I have always been perplexed with their keen desire to preserve at any cost what I maintain to be an over-wrought sense of dignity in connection with all problems directly relating to their chosen calling. But I observe that a new sense of dignity, born of the conviction that we are not only instruments of the executive or the mere carrying out of the mandates of government enactment in respect to school curricula, but of the advisory and legislative as well, is effecting a wondrous change in our professional outlook. It is most gratifying indeed to note that such an acknowledgment and recognition, so long withheld, is now being so generously showered upon the teaching body. I refer to the fine tributes of respect rendered this convention by not only educational administrative bodies but by governmental and business interests alike. To me it marks the era of emancipation from the mere details of class-room administration and instruction to the broad outlook and vision in the fields of educational advancement and opportunity into which we are now accorded full admittance. The common round is thus lightened.

The treatment accorded the convention in respect to banqueting and receptions was simply wonderful, and for most of us, never-to-be-forgotten. As I retrospect these fine social doings I recall that they were at least numerous, as the following would indicate: Guests of the Calgary City Council at luncheon in the Alhambra at Eatons; dinner at Turner Valley as guests of the Calgary School Board, afterwards an inspectional tour of the oil field; luncheon at the Macdonald, Edmonton, as guests of the Edmonton School Board; reception at Government House, Edmonton; guests of the Exhibition Directors; luncheon and social evening at the University of Alberta; luncheon at the Macdonald as guests of the Edmonton Chamber of Commerce; banquet at the Macdonald as guests of the Alberta Government; a delightful drive to the glacial field at Mount Edith Cavell. These, with many other pleasurable interludes, rounded out what will long be remembered as a most enjoyable convention. I was delighted to hear the complimentary remarks

made by many of the delegates, especially those from the far East, as to the lavishness of Alberta's hospitality. Frequent remarks on the humanity of our head governmental officials were also to be heard. One gentleman delegate from our farthest East exclaimed: "Your Minister of Education is so different to ours. Why, you can talk to him!"

The last session of the Convention took place at the Jasper Lodge after a delightful dinner had been partaken of at this beautiful resort. At its conclusion the new Executive held its first meeting and arranged such a progressive program of work as has already been partially suggested. A fine tribute of esteem was voiced upon the work of the outgoing Executive, particularly the great interest taken by the outgoing Chief Executive Officer and his fine lieutenant in the person of Mr. Coldwell, of Regina. The new officials elected to the most important offices for the ensuing year include our genial friend, Mr. J. W. Barnett as president, Mr. Coldwell as continuing secretary-treasurer, Dr. Macfarlane of New Brunswick as vice-president, and Miss Straith of Ontario as second vice-president. The new Executive includes one member from each province so provided as to give continuity of experience to the executive work. Our Alberta representative is Mr. R. D. Webb.

Again our provincial Alliance may give itself a pat on the back in that an Albertan of high educational repute and executive ability has been chosen as head of the Federation. It was an honor well-merited by our General Secretary-Treasurer, and bespeaks the very high respect in which his person and judgment is held by the members of our sister organizations. No doubt, he will maintain and extend during his term of office the very high position of this organization.

What a proud boast to say that the C.T.F. represents the collective opinions of more than twenty-five thousand Canadian teachers from coast to coast. What a force such an organization may effect upon educational policies and practices. What an encouragement to the provincial organizations to perfect their own alliances in respect to numbers and accomplishments. However, it is very disheartening to the officials of our organizations in carrying on the good work to know that there are still some who have not outgrown their prejudices in respect to Alliance endeavors and are seriously curtailing the results. I refer to a condition such as the work undertaken by your Provincial Executive when in urging educational reform we are directly asked by the premier of the province, "What per cent of the teachers belong to your alliance?" Or in other words, just what part of the teacher interest in these matters do you represent? The answer should be, "100%, sir, and now let us talk business." As the provincial memberships increase, so it is that the work undertaken by the Canadian Teachers' Federation will become increasingly beneficial and the status of every teacher in Canada will be correspondingly raised.

I realize how inadequately I have herein reported this convention to the general membership of our Alliance, but in closing I should like to repeat my only remarks made on the occasion of a discussion in one of the sessions. We as teachers are altogether too modest about our work. I felt that there wasn't sufficient publicity being given the findings of the

convention. I believed, moreover, that our organizations should syndicate educational articles to the daily press and thus keep up a continuous barrage—because educational reforms like any other type of reform must be sold to the public. I am further convinced that every modern means of publicity may be effectively used in educational matters. Would it not be really effective to have such an alarming situation as a board of rural trustees, depicted in secret session about the end of July, intent upon firing the teacher who is depicted also as enjoying herself at some holiday resort unconscious of the humiliation—fired without a reason—descending upon her? This could be suitably rendered by a skilful artist in a highly-colored poster and displayed in all its dramatic action upon several large billboards along our main highways. Or again, if the data obtained by the Manitoba committee on salaries were made avail-

able to the public in a comparative way by means of a large graph depicting the general salary conditions obtaining in Canada for teachers as compared with those of other professions. Or again, if at every educational convention the main slogans of the Alliance were paraded upon banners and stringers, the impressions made upon the public mind would be greatly intensified. And after all why should it be regarded as beneath our dignity to use methods employed by our politicians, our Red Cross society, our industrialists and even our churches to disseminate their propaganda. Could we not have an education hour over our radio about once a week and really advertise our wares to the unsuspecting public. I believe every legitimate means should be employed that would advance this greatest of all national assets, an unrivalled educational opportunity for every boy and girl in Canada.

EDUCATIONAL RESEARCH DEPARTMENT

EDITED BY M. E. LAZERTE, PH.D.

SUBTRACTION IN ALGEBRA I

THE causes of error in subtraction are many by the time the class has arrived at the stage where an exercise such as: "From $-4x + 7y + 2z - 6m$ subtract $-2x + 9y - z - 10m$ " may be assigned. In one class of forty pupils to which this example was given, there were seventeen different types of error having frequencies of 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 17, 1, 1, 1, 3 and 2 respectively. The writer has summarized the subtraction errors in exercises collected last year. The list may not include all common types. In this article the majority of the examples are selected from sections of reports on Algebra I that were submitted by Messrs. H. W. George, Norman A. Wait and Wesley T. Watts.

ERRORS CLASSIFIED

The common errors fall into a few large groups. The following list includes those now under consideration:

- (a) Errors in arithmetic.
- (b) Conventions not understood.
- (c) Difficulty with directed numbers.
- (d) Old habits do not fit new situations.
- (e) Language difficulties.
- (f) Novel situations.
- (g) Rules that are not understood are misapplied.

ERRORS IN ARITHMETIC

These errors should not appear in algebra. Lack of drill in the primary grades may result in frequent errors later whenever attention is directed to some new aspect of a question. Pupils who give 5 as the difference between 11 and 7 when subtracting $7x^2$ from $11x^2$ have their attention focused temporarily upon the x^2 . Lack of automaticity in the use of elementary number facts causes the lapse.

CONVENTIONS NOT UNDERSTOOD

In beginning algebra much time may be spent profitably on the conventions recognized in the subject. This fact is impressed on one more and more as he reads reports on student difficulties. There is

nothing inherent in the form x^3 to determine that it must mean the product $x \cdot x \cdot x$. It is not essential that $6y$ should indicate multiplication. The student studied arithmetic for years and in that subject forms such as $6y$ were not recognized. Former acquaintance with compound forms was generally limited to $6+y$, $6-y$, $6 \times y$ and $6 \div y$. The $6y$ meaning is a new convention that must be understood and explained. The pupil who wrote $4a^2 - 2a^2 = 2$, or the one who wrote $4a^2 - a^2 = 4$ was probably in need of this type of assistance. What were the needs of the student who wrote:

$$\begin{array}{r} 2x - 3x^2 + 5 - x^3 \\ -6x - 5x^2 - 3 - 11x^3 \\ \hline \end{array}$$

$$\begin{array}{r} -4 + 2 - 2 + 10 ? \end{array}$$

DIRECTED NUMBER

Here we have another convention. Arithmetical numbers combined ideas of series, group, ratio and relations. The idea of direction did not enter. It is implied in counting, but unexpressed. Many a pupil reacts to -6 , as if some mysterious sort of number had arisen to take the place of the familiar 6. Image the pupil's mental state when asked to subtract $-3a$ from $+5a$. He thinks he knows something about the $+5a$, but the $-3a$ must be accepted on faith. The matters of language and convention are both involved. What does "subtract" mean? When a pupil is asked to subtract 3 apples from 7 apples, the 3 apples may be called up in imagery as a part of the 7-apple group. When asked to subtract $-3a$ from $+5a$, the old support for thinking is gone. The pupil cannot see the $-3a$ in the $+5a$. What is he to do? In many instances he is lost. He begins to apply rules and to search for devices that have carried him over like difficulties before. He seldom thinks analytically of the term "subtract." The old notions concerning "take away" simply will not fit. Old concepts must be modified. The idea of direction must be fitted into the number scheme. The word "subtract" must be generalized again. The law of operation must not appear as anything more than the necessary result of forcing the new directed numbers into certain old conventional grooves. Our

method of extending the four fundamental operations to include directed numbers must take cognizance of this fact.

OLD HABITS DO NOT FIT NEW SITUATIONS

One example will suffice to show the force of this factor. In primary arithmetic the pupil, when asked to subtract 5 from 9, often writes $\underline{-5}$. In the intermediate grades he may yet write $\underline{\frac{5}{2} \underline{6} \underline{8}}$ at a time when the 268 is vaguely thought of as parts such as hundreds, tens, and units. In algebra our student (our example refers to a pupil with an I.Q. of 128) is asked to subtract $2x^2 - 3x - 7$ from $x^2 - 3x + 15$. The record reads:

$$\begin{array}{r} x^2 - 3x + 15 \\ - 2x^2 - 3x - 7 \\ \hline \end{array}$$

The old habit of affixing the minus sign carries over in its former dress, although the pupil says, "Change the sign and add."

The habit of thinking of subtraction as a process of taking a smaller number from a larger one is responsible for this error:

Q. Subtract $6a + 5b + 4c$ from $4a + 2b + c$.

$$\begin{array}{r} 6a + 5b + 4c \\ - 4a + 2b + c \\ \hline 2a + 3b + 3c \end{array}$$

Q. Why did you change this around?

A. "We always subtract the smaller member from the larger."

LANGUAGE DIFFICULTIES

"From $-2x^2 + 5xy - 3y^2$ take $-3x^2 - 2y^2$," is given to a class. They are accustomed to the language form "Take — from —." This language change causes the pupil to write $\underline{-3x^2 - 2y^2}$
 $\underline{-2x^2 + 5xy - 3y^2}$

A bracket is in reality an abbreviated language form, another convention. When $5x - 6y + z - (3x - y + 2z)$ is simplified as $5x - 6y + z - 3x - y + 2z$, the language of the bracket is not understood.

NOVEL SITUATIONS

One student who ordinarily succeeded with subtraction met the unusual example: "Simplify $0 - (-a - b - 3c)$ " and worked to a result " $-a - b - 3c$."

Another student worked examples correctly when brackets were used, but failed completely when the same examples were given in column form.

RULES MISAPPLIED

1. Change the sign in removing bracket, e.g., simplified as $3x + y - 2z$ when given $-(3x - y + 2z)$.

2. Subtract 15 from -12 .

Ans. $-12 + 15 = -27$, because "A minus and a plus give a minus."

3. $3x - 4y$ Q. How did you get this result?

$8x + 5y$ A. "Like signs give minus, and unlike signs give plus."

4. $-a$ "A and $3a$ are $4a$, and if signs are the same, you make it a plus."

$+4a$

5. $-a$ "Get minus because both signs are minus. Just took 3 away and left a."

$=a$

6. $-a$ "Two minus give a plus. Then add the literals together."

$+4a$

How should subtraction be taught? How might these errors in using the laws governing directed numbers be avoided? No one method will best serve all pupils. There is much evidence that something more than rules is necessary. It may be worth while to explain procedures to pupils even though they cannot parrot it all back again.

The writer took from one class a group of seven students who did not appear to understand the meaning of subtraction. On a preliminary eight-question test the correct responses were 4, 2, 3, 3, 8, 4 and 2. One pupil had perfect answers though lacking a language in which to explain the meaning of her work.

A twenty-minute lesson followed, in which positive and negative numbers were represented on a straight line graph. Subtraction was considered as the process of finding the scale distance from the one value to the other. The idea most prominent in the discussion was: "What value must be added to — to give —?" On another trial of the pre-test the scores were 6, 8, 8, 8, 6, 5 and 6. The lesson avoided reference to any test item. The average score increased from 47% to 84% in the twenty-minute period. Retention effects were not determined. It is interesting to note that the pupil who had a perfect score on the pre-test dropped to 75% answers on the repeated test. The temporary effect of new theory was to disrupt processes that were functioning automatically.

In contrast to this result are the findings of one of the three teachers whose data are used in this article. He reports an experiment in which the above method of presentation was not as successful with him as was another which deduced the laws of operation from a few specific examples in which correct answers were determined by fitting directed numbers into former conventions and established by analogy. Thus:

+4	+4	+4	+4	+4	+4
+4	+3	+2	+1	0	-1
0	+1	+2	+3	+4	?
+4	+4	+4	+4		
+2	+3	+4	+5		
+2	+1	0	?		
-3	-3	-3	-3	-3	-3
-3	-2	-1	0	+1	
0	-1	-2	-3	?	
-3	-3	-3	-3		
-1	-2	-3	-4		
-2	-1	0	?		

Subtraction may be taught successfully by either method of presentation. Which method do you find the superior? How do text-book writers determine the methods which they recommend?

New Examinations for Old

(Pt. II)

G. M. DUNLOP, B.A., Provincial Normal School, Edmonton, Alta.

In my last paper the merits and weaknesses of the essay type examination were discussed. A brief exposition of the objective examination was also presented, accompanied by a consideration of the methods of preparation and marking of such examinations. I will now consider the advantages and disadvantages of the latter method of measurement, and will submit what conclusions I have been able to arrive at on this subject.

The first argument in favor of the objective examination is the objectivity or reliability of its scoring. Granting that essay type answers cannot be scored with anything like reliability, this accuracy of marking gains in attractiveness. In the objective examination there is only one scoring plan, which excludes entirely the factor of the personal opinion of the examiner. The answer is either right or wrong. When a stencil over the examination paper is used, the marker need not even be conscious of the sense of the answer. If the right word or words appear where required the marks are given automatically. A child of twelve can mark such a paper as accurately as the most experienced teacher. There can be no variation in marks, because there is no room for prejudice, bias, or even different standards of excellence demanded—in a word, the subjective factors which render the marking of the essay type examination unreliable.

A second argument lies in the extensive sampling of the objective examination. Where the three-hour essay type final tests so small a fraction of the year's work that its judgment on the fitness of the student to advance to the next unit of work is extremely dubious, the new-type examination tests a vastly greater amount. Writing is reduced to a minimum. The literary setting is eliminated. All of the student's time is consumed in thought and in writing the brief answers in the blanks provided, or in encircling or underlining words. The result is that a one-hour test in the form of an objective examination covers much more work than can ever be tested in the formal three-hour examination.

A third attraction is the economy of time in scoring. We are conscious of the heavy burden of marking the ordinary examination. On the objective examination the student's answer is so reduced in length, so easily sought out, and so definite that marking is greatly speeded up. If on one page there are twenty words inserted by the student, they only need be read, in place of the two hundred or more which now are laboriously considered. If a marking stencil is used further economy of time results. My own experience with these examinations shows that you can work much more rapidly in correction, and that there is little strain and even little concentration required for accurate marking.

Then there is the matter of bluffing. While the student may pad in the essay type, he finds it impossible to do so in the objective examination. In the space provided only one word is usually required to answer the question. If that word is there a credit is given. If it is not, no mark can be earned no matter what else he writes in the space. Bluffing or

padding under these circumstances becomes impossible.

One feels, too, that a great advantage of such an examination is the securing of a result which can be compared with the results of other classes and other years. In the essay type examination there is little prospect that your standards will be the same while correcting two different sets of tests. With the objective type there is no possibility of difference in standard and as a result your comparison is valid and helpful.

Finally there is the great advantage which lies in the utility of the objective examination in the diagnosis of the weaknesses and strength of your class. Here each question should be used to test one portion, or phase of the work. In history, for example, we test in one question the knowledge of the student of the American Revolution. In French we test the student's ability in the use of the indirect object. The testing of the one ability, or skill, or the one definite period of knowledge is possible in every subject. When the tests are corrected a tabulation of the results of all the pupils on each question will reveal the attainments of the class in each particular division of the work or skill required. What, then, has the teacher gained? He has gained a definite and accurate knowledge of the topics in which the students as a whole are weak; those in which they are strong, and those in which their knowledge is only fairly satisfactory. He has learned that reteaching must take place in certain of the topics. He has learned that review is needed in others. He has learned that the students' knowledge is so satisfactory in others that he need not resort to either reteaching or review. Consider the high school teacher preparing his students for a final examination. Instead of approaching the review period of the year with vague and hopeless plans for the reviewing of the entire course taught, he approaches it knowing what needs reteaching, what review, and what may safely be overlooked altogether. Surely this feature must prove attractive.

The objective examination has its limitations, too. First of all there is the neglect of language training. The old-fashioned teacher feels that failure to demand scholarly and literary expression of the knowledge possessed, no matter what the subject may be, is weakness and folly. I have suggested in the other paper the answer to this, which is that if the purpose of the examination is to test thoroughness of knowledge or proficiency or skill in a particular subject, it is wasteful of time, and hopelessly confusing to the result to bulk literary ability with knowledge of the subject which you desire to test. In addition it limits the extensiveness of the testing. Finally, while encouragement and insistence upon proficiency in English is a laudable thing, it should be an end in itself and not allowed to destroy the accuracy of the testing in other subjects. This, then, is not a valid criticism.

The second criticism frequently urged is that it permits and even encourages guessing. This is true with some of the types, as in the True-False type or

in the Multiple Choice. If, however, you have adopted the R-W formula in the case of the True-False type you will find that you are penalizing sufficiently. Brinkley's investigations show that this formula over-penalizes to the extent of fifteen to twenty per cent. Where classes have been thoroughly warned the guessing with its resultant penalization would be greatly reduced. I feel that this constitutes a weakness, however, in this particular variety of test.

In multiple response types the formula is $R - \frac{W}{N-I}$. Here, again, investigation shows that there is over-penalization. When one considers that these are the only two varieties of objective tests which permit guessing, and that guessing in both cases is sufficiently penalized, one may eliminate guessing as a very important criticism of this technique of measurement.

The next criticism which one hears is that objective examinations test memory alone. This is definitely untrue. In every one of the types submitted in the June issue reason and judgment may be required, save in the case of the Date-Event type and the map location type, where judgment is not desired and, indeed, can never enter. In the other types the nature of the question and the skill of the examiner can compel the use of reason rather than memory, or combined with memory. For example:

Earliest civilization developed in Egypt because:

1. The Egyptians discovered metal and a method of working glass.
2. The Egyptians learned to keep written records of their ideas.
3. Egypt had a mild climate and a fertile soil.

This example requires the exercise of judgment. In the hands of another examiner you might have a purely memory question of the same type. Egypt's contributions to civilization were: (Underline three correct answers).

1. Law and government.
2. Discovery of copper.
3. Art and sculpture.
4. A calendar.
5. An alphabet.
6. Papyrus.
7. Hieroglyphics.
8. Agriculture.

Here the question requires the exercise of pure memory only. This suggests that it is not the objective examination which is deficient in the utilization of reason on the part of the students, it is the manner in which the tests are constructed.

Another criticism is that they measure recognition rather than recall. This is a criticism of persons unacquainted with the variety of tests in objective examinations. The traditional examination does measure spontaneous recall. So do recall types of the new-type tests. Only in the case of the purely recognition types is this criticism valid.

A far more valid criticism lies in the fact that they test extensively rather than intensively. The objective examination tests:

1. Memory of fact, or of judgment.
2. Recognition from stated alternatives.
3. Judgment or reason where a small amount of material is presented.

What it fails to do, though, is to test the abilities of the students in organization and manipulation of materials into reasoned wholes. We must confess that this forms a major weakness in the objective examination, and one which is hard to overcome with the types in use at the present. Let us use the example of History again. A student who remembers a few facts need not be a good student. The student, however, who can recall the facts, organize

them into a significant whole, and show his ability to interpret them has satisfactory ability in the subject. The essay type examination alone can test this ability effectively. To the degree, then, to which you desire to test this power, the objective examination may be considered defective.

Another criticism related to the above is this: What type of teaching would result in thoughtful content subjects if the new-type examination of isolated, scrappy, unrelated facts were resorted to to the exclusion of other elements? It is feared that it would result in teachers making lists of just such isolated facts and drilling their students on them as is now done in number work in the junior grades. Drill for immediate recall in such subjects as Geometry and History would encourage the deadly monotony in the classroom which we are trying to avoid, and which is frequently found where drill and review replace teaching and student activity.

For the frequently given criticism that such tests require mimeographing I can only say that when the mimeograph is absent, a hectograph can be constructed, at a price of two dollars, which will serve perfectly. If the class is small typed tests with carbon copies will suffice. If that machine is lacking carbon copies of handwriting will accomplish the same end. Finally, if all else fails the examination can be placed on the blackboard, and the answers on sheets furnished the students.

Now what conclusions have we formed in regard to the use of this new technique of examination?

Granting that the objective examination can be marked more accurately, that it is valuable from the standpoint of diagnosis of weaknesses and strength in a class, that they can be marked more quickly, one must conclude that they have a place.

On the other hand we find that there is the insuperable weakness that they do not test intensively, that they do not test ability to manipulate and organize material, and that they do not test larger problems of judgment. Thus we see that there are fields into which the objective examination cannot enter.

What is a reasonable conclusion as to the utility, then, of the objective examination? Surely we can say that while it has faults, its virtues demand that it find a place in our system of examinations, and that place obviously should be the testing of such material as lends itself to the method, and wherein the essay type of examination is less attractive.

When may the objective examination be used most effectively? I will list the functions which I believe lend themselves to this method.

1. Testing pure memory of isolated facts.
2. Testing recognition of facts.
3. Testing ability in making judgment or conclusions of a brief nature.

On the other hand I would suggest that the essay type examination might better be left as the method of measurement where is required:

1. Intensive testing of a body of material.
2. Manipulation and organization of material requiring reasoning.

In some subjects the objective examination can be used largely. In others it should be used very sparingly indeed.

Now let us consider the extent to which the objective examination can be used. Below are some of the subjects taught in High School, with estimates

of the part in measurement of results which might safely be assigned to the new-type examination, and of the part which must be left to the essay type technique of measurement. These are only rough estimates which would require verification by the teachers of these subjects.

Subject:	Objective Examination	Essay Type Examination
Composition	15%	85%
Literature	25%	75%
History	25%	75%
Algebra	35%	65%
Geometry	40%	60%
Physics	50%	50%
General Science	50%	50%
Chemistry	70%	30%
French	90%	10%
Latin	90%	10%

Now, in conclusion, let me summarize a few of the more important findings of this brief study of examinations.

1. The Objective Examination will never completely displace the Essay Type Examination.
2. It can be used to some extent in every subject.
3. The ideal examination should be composed of Essay Type and Objective Type questions—each being used for testing material lending itself to one or other of the two techniques.
4. The objective examination can be used in both elementary and secondary schools with profit.
5. It should be used in informal testing as well as in more formal examinations.

The progressive teacher would be well advised to make a careful study of this new method of measurement, and a sincere attempt to discover its utility in her classroom, since there is every prospect of it becoming an accepted instrument of measurement in the near future.

Correspondence

Thomas Edward Hughes, Fellow of the College of Handicraft, London

Plymouth, England, June 30, 1930.

To the Editor,
Alberta Teachers' Magazine.

Sir:

May I be given an opportunity, through your columns, to pay tribute to a colleague in Edmonton, Alberta?

At our recent Easter Conference at Torquay, Devonshire, confirmation was given, by installation, to a number of Fellows of the College, who were duly elected early in the New Year.

The ceremony proved to be one of the educational attractions of our annual gathering, delegates attending from the whole of the representative bodies in the United Kingdom, and, in addition, was graced by the presence of the Mayor of Torquay, the Director of Education, and many other notable visitors.

The Selection Committee place a very high standard of attainment upon those who are nominated, and the records of each lady and gentleman are announced as they are presented.

On this occasion appointments were made in India, South Africa and Canada, in addition to those in the home country, and the mention of Mr. Hughes and his record of work, both educational and administrative, met with a great reception, so much so, that I am prompted to send you this account of the proceedings.

The modern world, with all its social and economic improvements, has been built up largely as a result of the interchange of experiences which has been going on between the nations of the earth for so many years; whose representatives have been imbued with a desire for progressive educational reform, and whose efforts have, as a result, been directed towards securing a better understanding of each other's difficulties.

This probably explains the fortunate circumstances which enabled me to become associated with Mr. Hughes during my tour of the Dominion in 1925, and again in 1927, at the World Educational Conference at Toronto, where I was immensely impressed with his broad outlook upon education.

Since then there has grown up a section of the College of Handicraft in Canada, of which, I believe, Mr. Hughes is President.

The activities of this new section of the College are being watched with interest and pleasure, and I congratulate Mr. Hughes most heartily, not only upon the honour which has now been conferred, but also upon the success of his continued interest in a sound progressive policy of educational growth and development.

Crafts, both cultural and industrial, have until quite recently been dealt with as mere shadows of an English educational system, but the "Findings" and "Recommendations" of the various committees which have been set up from time to time for the purpose of investigating the social, industrial, and commercial life of the people, are being proclaimed by general acclamation as a sound and logical basis for all true educational effort, such as we must surely look to for a solution of many of our problems, including that of unemployment.

The great changes which are now taking place in every type of school are already having an excellent effect upon the youth of the nation.

Their outlook is being broadened, and their hopes and expectations of a successful career in life are the subject of an intense investigation and effort on the part of the teachers in all areas.

CHAS. F. PARKER.

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Welcome Back!

FRIENTS of Dr. C. Sansom will all join very heartily in welcoming him back amongst us after his two years' sojourn in Berkeley, California, as exchange professor. His return means that what is the loss of the University of California is our—Alberta's—gain. Alberta teachers are delighted to find that their pessimism of two years ago was not justified, for then our hearts sank as we wished him *au revoir!* hoping it was not *good-bye!*

Dr. Sansom is the recognized possessor of one of the most virile, well-stored and open minds of those connected with educational life in Alberta. He is a splendid instructor, a keen student of educational administration, an ardent reformer and, withal, one who has kept abreast of the modern trend to obtain higher and yet higher academic standing. He obtained his Ph.D. Degree in 1929 from Chicago University.

While in California, Dr. Sansom delivered lectures during two regular academic years and two summer sessions in the School of Education on History of Education and gave a course in the Principles of Social and Civic Education. His services were highly esteemed and would doubtlessly have been retained indefinitely had not the drawings of Alberta been too strong to be resisted. His heart told him that this would be the case when the exchange professorship was offered him; hence Dr. Sansom always gave everybody to understand that Alberta was his home, temporal and spiritual, and sooner or later he would



DR. C. SANSON

return and remain amongst us, despite the counter attractions of the beautiful, sunny California climate and the splendid prospects of permanent location in the wealthy, long-established university, ranking high amongst the institutions on this continent. In coming back, Dr. Sansom, comparatively speaking, stands in the way of splendid prospects south of the border.

It was close to a quarter of a century ago that Dr. Sansom came first to Alberta to take a position on the High School Staff at Calgary. Since then he has served as Acting Principal and Superintendent of Medicine Hat Schools; as Inspector in the Macleod Inspectorate, being the first Inspector in Alberta to use an automobile; as Instructor on the staffs of Calgary and Camrose Normal Schools; and as first Principal of the Edmonton Normal School. After the Edmonton Normal School was closed, he was located again in the Camrose Normal School where he was serving previous to going to California.

Dr. Sansom's devotion to the cause of education always led him to take a deep interest in the cause of his fellow-teachers. He served the Alliance as President of the Camrose Normal Staff Local Alliance and he was Provincial Vice-President when he left Alberta for California. At the time of writing we are not informed in which Normal school Dr. Sansom will be placed by the Department, which granted him leave of absence two years ago.

TO STUDENTS WRITING THE FINALS

This is the day and this the fatal hour
For which, I hope, you've labored to prepare;
And now you must exert your every power
To recompense your teachers for their care.

Small satisfaction will it give you now
To penitently think of work not done.
The time for that was several weeks ago
When you were wasting time and having fun.

This is no time for wringing of your hands
And trembling, shrinking, pale and wan with fright.
The next three hours have their own demands—
There's an examination you must write.

The trembling hand and perspiration cold,
And pounding heart and tightening of the throat,
The beating brain and tears which you can't hold,
Are all conclusive proof it's "got your goat."

We gave you warning—almost every day;
And told you it would find you in this state;
You us ignored—they were too far away.
We hope your penitence is not too late.

So calm yourselves and do the best you can,
To worry now will only make it worse;
One must be cool while writing an exam.
Answer those questions which you do know first.

At last it's over, and you think you've failed;
You're sure of it—you're quaking now with fear?
Don't let your care-free spirits be assailed,
They'll teach the same course in this school next year.

—T. H. F.

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The A.T.A. Magazine

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Official Organ of the Alberta Teachers' Alliance, Inc.
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Editorial

RESEARCH IN EDUCATION

AT the last three Conferences of the Canadian Teachers' Federation the question of the Research Council of Canada allocating a grant for Educational Research has been debated. It has been felt strongly by the representatives of the provincial organizations without exception, that one public service more than all others which requires a friendly guide and counsellor in the form of research data is that of education. In other activities not strictly a part of government function—such as agriculture, labor, mining, commerce—great Federal departments are found engaged in research, analysis, and solution of those problems that affect the great mass of the Canadian people. These departments do not control and rule the people whom they serve; they certainly do not attempt to dictate the policies of business, labor, mining or farming. Yet the great activities of agriculture, labor, mining and commerce are saved vast sums of money each year through the assistance of the Federal departments charged with assisting them. Why not the schools? The hundreds of millions of dollars invested throughout the Dominion in educational plants, the scores of millions spent year by year in carrying on; the obvious lack of authoritative information regarding the scientific application of curricula, examinations and the like, might give a visitor unacquainted with our schemes cause to pause and wonder if our people really look upon our schools as ranking among our most cherished institutions, or whether we just carry on because it is customary to carry on with a blind faith that the Deity *must* surely grant the maximum reward for so generously providing, without vehement protest, the money for the installation and operation of the educational plants. Many thoughtful educationists are beginning to wonder whether or not our vast expenditures on education are wisely guided; whether or not millions are wasted every year and simply thrown down the drainpipe of inefficiency or ineffectiveness, and the taxpayers bearing a useless burden.

* * * * *

THIS is what is really behind the suggestion of the C.T.F. that the Research Council of Canada give a little attention and allocate a reasonable proportion of their considerable appropriation to education. It is suggested that it create an educational branch under an expert head to furnish reliable and accurate information on educational programs and advanced methods of instruction to schools throughout the country. It might conduct investigations on all educational matters, such as: illiteracy, rural education, elementary education, secondary education,

vocational and technical education, higher education, professional education, physical education (including cadet training, health and recreation), specialized education, training of teachers, immigrant education, adult education, examinations and tests, and other phases of the subject.

It might investigate school accounting systems and administration for the sake of improving or promoting efficiency; it might inquire into the training requirements of various businesses, vocations, professions, trades and crafts in connection with courses of study in the schools; and it might aid in equalizing educational opportunity throughout the Dominion. It should not take upon itself one iota of school control from the provinces or local educational authorities; in all matters of education the province should remain supreme and there should be no attempt to impose the customs or practices of the East upon the West, or vice versa, in any school questions.

Its aim, as previously stated, should merely be that of a friendly guide and counselor rather than by implication or direct urge to interfere with public or private institutions. It would thus avoid plunging schools into politics or attempting to standardize education, nor need it tend to increase the cost of education but rather tend to lessen the expense to the taxpayers.

* * * * *

FROM the foundation of our nation, education has been peculiarly a provincially local problem; nevertheless it does seem logical that the Dominion Government, indirectly, through its Research Council should recognize the importance of public education as a training for citizenship, as essential to our existence as a happy, united and prosperous people, as is scientific information on, say, the best processes for manufacture of goods, the elimination of waste of natural gas, or the most economical method of extracting mineral from ore. The Research Council of Canada might well give to education the benefit of some counsel and encouragement. Every taxpayer in the land might be benefitted through the various economies and efficiencies made possible by co-ordinating activities, elimination of duplication, and the giving of expert advice on schoolhouse construction, business management of schools, curricula, examinations and the like.

* * * * *

THE teachers' organizations do not favor the appropriations from the National Treasury to be expended directly on local education, but consider it to be a fundamental requirement of national activity that a Dominion body should give to education what it gives to such services as agriculture, labor, mining and commerce. The C.T.F. is modest in suggesting that the Research Council of Canada break new ground in a small way at first by concentrating

on the problem of examinations. The present is a peculiarly opportune time, for the question of examinations is to the fore in Ontario, in Alberta and several other provinces. By so doing it will avoid a separate enquiry by each provincial department of education—each department necessarily covering practically the same field in practically the same way; each working independently of the other and each expending money and effort to practically the same extent which might be done by one body at a fraction of the total cost to all the provinces.

We suggest that the Research Council would be in a peculiarly favorable position to carry on this work by reason of the fact that its director or expert who might be appointed to take charge, would have the unstinted support and unfailing co-operation of a Dominion-wide body of technicians, the Canadian Teachers' Federation. Questionnaires and other documents which might be desired as a basis of research work would be expeditiously dealt with; in fact, it might be that the principal task of the expert would involve little more than the co-ordination or direction of the work of the teachers' committees throughout the Dominion.

THE MACHINE GRINDS ON!

THE following is typical of a large number of letters which have been received recently by the A.T.A. office:

"I enclose a clipping from the *Calgary Herald* of August 19th, which I beg to ask you to read."

"From the article I quote: 'Why not send these women back to their homes where they belong, when the husband is quite capable of supporting them, and give their positions to those women and young men who actually need them?'

"Does this sentence apply with equal force to the married women who are teaching when their husbands are employed and are earning a salary sufficient to support them? Many young teachers just out of Normal, after having spent all their savings to qualify, are unable to secure schools because married women whose work is in the home and no longer in the school, provided the husband is earning, are holding their schools."

"Kindly let me know either by letter or through the columns of the *A.T.A. Magazine* what stand the Alliance takes with regard to this important question and what has already been done or what is going to be done to solve it."

To withhold publication might be interpreted as evidence that the Alliance has adopted a policy in regard to the "married women" question. The A.T.A. has neither gone on record through its Annual General Meeting as being opposed to nor as favoring the appointment of married women as teachers—nor has its Provincial Executive. This is an economic question rather than an educational question. Furthermore, as the law now stands, it is an unlawful act to discriminate against a person on account of sex, and there are those who have doubts as to whether or not a disqualification of married women teachers would conflict with the law.

OF course, it is not open to question or argument that if there were fewer married women teachers employed throughout the Province there would be fewer other teachers desiring schools out of employment. Present economic stress has induced a large number of farmers' wives holding certificates, to bolster up the family finances by coming back to teach, and its deleterious effect is obvious to the prospects of young men, and young women, who have recently undergone a course of training in the Normal schools. The latter, however, are not the only ones badly hit, nor is the employment of married women teachers the only cause of the present debacle: the "mass production" system in vogue of training teachers is largely responsible also.

* * * *

THE Alliance did not strenuously oppose the building of the new Normal school at Edmonton—it would have been useless to do so, for the citizens of Edmonton were pressing for its construction, the appropriation had been made and nobody in the Legislature seemed disposed to protest the expenditure of approximately half a million dollars and the annual upkeep and maintenance year by year of the institution. When the new Edmonton Normal School was decided upon we contended that:

- (1) Two Normal schools in the Province were sufficient to take care of present and future needs, unless the period of training were increased to two years.
- (2) Although, obviously, one of the Normal schools was located distant from a large centre of population (for which the present administration was in no way responsible) it would have been wiser to make the best of a bad job, not build another school.
- (3) The talk about closing the Camrose Normal School will never get beyond talk.
- (4) There should be other conditions for entry to Normal than Grade XI standing, evidence of good health and a certificate of good character. We recommended that there be adopted a sane policy of selection along lines similar to the following:
 - (a) Likely suitability or otherwise for the work of teaching.
 - (b) A guarantee of remaining in the work for a reasonable time.
 - (c) The number of entrants each year be restricted to the estimated number of teachers required the year following.
 - (d) Applicants be chosen on a competitive basis, the High school record being one gauge at least.

RESULTS seem to prove beyond a shadow of doubt that money was wasted in building and, now, in maintaining more teacher-training institutions than the Province really requires. Edmonton has succeeded in getting its Normal school, but by this time a great number of Edmonton parents, Edmonton students and others have arrived at the conclusion that it has not been an unmixed blessing either for themselves, the teachers or the public as a whole. Yes, training for teaching was made so immediately available, so inexpensive that scores and scores of young men and women "took Normal" instead of obtaining other employment, having just the one effect of dumping hundreds of young people on the market at a most inopportune time. We reiterate that it is no more sound a policy to build teacher-training institutions just because there might be a large number of men and women desirous of taking the course, than for a government to build battleships and barracks merely because a host of men might choose the navy or army as a means of obtaining the wherewithal to obtain their daily bread. We have heard of battleships being scrapped and military establishments demolished when their existence was no longer considered essential. Scores of the newly graduated Normal students will drift into other callings and never be able to make any use whatsoever of the year's course in teacher-training, provided at government expense. The public purse will be out approximately \$300.00 per capita, and the student (or his parents) considerably more, for not only is personal expenditure consequent upon attending Normal to be considered, but he has lost besides one year's earning power in some gainful employment. Parents of Normal school graduates out of employment, the graduates themselves, married men teachers with families actually in need are dismayed indeed at the blank prospect confronting them; they are waiting eagerly for some adequate course of action to relieve the present situation and prevent a recurrence of this overcrowding of the teaching profession. What is perilous to the teaching body will, sooner or later, prove disastrous to the schools and pupils and a menace to the whole structure of the educational system of the Province.

CONGRATULATIONS, MR. McNALLY

We tender hearty congratulations to our genial Superintendent of Schools, Mr. G. Fred McNally, upon his recovery from a long illness. He is back on the job once more (but only part time yet), and visitors to the Department of Education will be happy once more to enjoy Mr. McNally's cheery greeting.

Book Reviews

"MATHEMATICS FOR STUDENTS OF TECHNOLOGY"

IN TWO VOLUMES

By L. B. BENNY, M.A. (Cantab.), B.A. (Lond.)
Principal, Municipal College, Leigh—
Oxford University Press

THESE two volumes have for their subject matter what is sometimes called "Unified Mathematics," "General Mathematics" or "Practical Mathematics." They were written for English students who by part-time study are preparing themselves for technical training.

In the preface the author says: "It has now become customary to give part-time students a course of 'Practical Mathematics,' which shall include only such portions of the subject as are directly of use in practical applications. While this object may be wholly praiseworthy, I believe that it is tending to degenerate, in many cases, into little more than a collection of rules and applications, without logical coherence. Students often fail to understand the elementary algebraical processes, and their progress throughout their course is hampered thereby." The author has attempted to make his books "practical" without sacrificing sound mathematical principles.

The first volume or Junior Course consists of Arithmetic, Algebra, Geometry, and Trigonometry, but these are not kept in watertight compartments. The Arithmetic covers a review of elementary processes, elementary mensuration, and elementary percentage. Rough estimates, checks and the retention of the proper number of decimal places is stressed throughout. The true method of estimating an error is also taught.

Algebra is introduced through mensuration and both are given together. Numerous diagrams are used to aid the student in building up formulae. The problems are numerous, varied and of interest to the average student. The use of symbols is very well explained in this portion.

Linear equations, brackets, simple factors, negative quantities, multiplication, fractions and indices complete the Algebra content. All are taught from sound principles and from the similar process in Arithmetic wherever possible.

Logarithms are introduced with indices and both theoretical and practical uses are given.

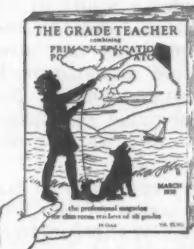
A portion of the text is devoted to elementary graphs, including the graphs of algebraical expressions, especially the straight line in which some of the properties usually included in Analytic Geometry, are deduced.

The Geometry is largely deductive with theorems of practical importance being given first consideration. The topics include angles and parallels, congruence of triangles, parallelograms, theorem of Pythagoras (given special attention), areas, similar figures and the circle. The exercises are both numerical and of the usual type.

The portion treating of Trigonometry defines the functions and gives numerous examples of the solving of the right angle triangle.

The Senior Course continues from the Junior. In Algebra more difficult factors, and quadratic equa-

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tions are given early in the text. These are followed by variables, the function notation, variation and proportion.

Graphical representation includes a study of the linear, quadratic and cubic functions and the rectangular hyperbole graphical methods are used throughout the book, to supplement analytic methods and when that method is more convenient. Not only are curves plotted from formulae but attention is given to the determination of laws from experimental data.

The content of the Trigonometry is similar to that of the average text with the omission of the long exercises on identities. The graphs of the functions are plotted and those of the type $f(x) \sin x$ are added. Much attention is given to the solution of practical examples of the oblique triangle.

Vectors, polar coördinates and elementary complex numbers are introduced but these topics are not treated at any great length.

A chapter is devoted to solid Geometry. Sections and junctions as well as areas and volumes are studied. The practical use is very marked in this chapter.

The second part of the volume introduces the calculus. About one hundred pages are devoted to limiting processes, the differential coefficient, differentiation, integration, maxima and minima, centre of gravity, moment of inertia and radius of gyration.

The Progressions and the Binomial theorem are dealt with, along customary lines, but with a large number of refreshing exercises. Exponential and logarithmic functions complete the book.

In reading the books one must remember that they were written for students who wish to apply their Mathematics, consequently the examples and exercises are drawn largely from engineering practice. They should prove of interest to the teacher interested in the practical applications of the subject. The exercises are numerous and embrace a wide range of subjects. The form is pleasing and the many illustrations are clear and instructive.

It appears that Mr. Benny has been able to combine the "practical" and theoretical to a marked degree. They are developed together in a book that is a well-ordered piece of work.

"PRACTICAL MATHEMATICS"

A. H. BELL, B.Sc., Director and Secretary
for Higher Education, Sheerness—
Blackie and Son

M R. BELL has chosen for his "text," the words of Professor Whitehead, "Algebra is the intellectual instrument which has been created for rendering clear the quantitative aspects of the world." This book aims to include only the useful parts of Elementary Mathematics. The early chapters deal with Algebra including positive and negative numbers, addition, etc., powers and indices, simple equations, graphs, surds, etc., as contained in the average text. The exercises are mainly from science and engineering. Elementary Trigonometry is given under ratio and proportion. The subject is not treated fully but one should be able to handle the majority of problems involving Trigonometry, after mastering these sections.

The slide rule is introduced along with logarithms. The quadratic graph is studied before the quadratic equation. Throughout the book graphical methods are put with analytical methods wherever possible. Theory of quadratics and simultaneous quadratics are given fully.

The area bounded by a curve is given with numerous applications to science and mensuration. This is preparatory to the calculus which is given later.

The Progressions and various series are treated in the usual manner. Variation, the functional notation and approximations are studied sufficiently enough for the average technical student.

The calculus, both differential and integral is introduced towards the end of the book. The applications are well chosen from science and engineering. A chapter on Permutations and Combinations completes the book.

Mr. Bell has apparently aimed to omit what he might call non-essentials. The book covers a wide range of topics but one must remember that it is what the author calls a "class" book. The teacher is required to teach and not leave the instruction to the text-book. Students studying by themselves might have trouble with this text. The author wishes to avoid "Academic" treatment as far as possible and has substituted useful applications for artificial problems. He intimates in his preface that he wishes to avoid "juggling with meaningless symbols."

The exercises are arranged so as to prepare for future work. They are well graded so that all types of students should find them of interest.



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OUTLINES FOR SEPTEMBER

**Outlines for Grades I to VII Inclusive, by Courtesy of the
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Suggested Outline for Average Class

GRADE I.—

ARITHMETIC

Counting to ten.

Group recognition and making of symbols 1, 2, 3, 4, 5.

Teach name word, figure and concept. Use these daily in matching exercises.

Bead-stringing, laying of sticks in groups, parquetry blocks, buttons, number boxes, etc., are all aids in developing early number sense.

Group 2 and 3 and teach combinations informally.

Separations in these numbers will follow naturally.

READING

Choose your beginning reader and build your own vocabulary to suit.

Suggested September vocabulary: Stand, sit, book, cat, dog, flower, take, door, chair, window, bring, me, the, one, two, three, four, fun, walk, jump, five, can, I, see, red, green, blue, yellow, to, a, black, white, sing, bow, hop, play, march.

PHONICS: Guessing games for ear training. Teach m, a, s, f, t, c. Drill much on easy words. Matching games on blackboard with initial sound letters and isolated letters as: s, sit; f, flower, etc. Drill games on taking the sound of the initial letter from familiar words.

Blackboard reading entirely should be used, involving sentence reading of familiar vocabulary. Much action work. Care in allowing no word saying here will do much to insure good reading later. Rhyme matching with printed tickets should be started in this month. Teaching vocabulary in print will facilitate early book use; but writing or a combination of writing and print, seems to give equal results at a later stage.

LANGUAGE

Aim at clear-cut *complete* single sentences. Use concrete objects available for practice in expressing thought. Informal conversational lessons correlated with hygiene, nature study, or citizenship give a wide scope for material.

Suggested Material:

Stories—

The Three Bears; The Little Red Hen.

Dramatization of parts of these; also of nursery rhymes taught for memory.

Pictures—

Show many action pictures, leading the children to observe keenly.

Memory—

Jack and Jill; Little Bo Peep; Jack Be Nimble.

HYGIENE

Personal cleanliness.

Preparatory talks for visits of nurse, dentist and doctor.

CITIZENSHIP

Courtesy in the schoolroom; the playground; the assembling and dismissal, etc.

NATURE STUDY

The sun and its light and heat for us and for plant life. Weather conditions; preparation for calendar.

The beautiful out-doors in which to play: sky, colors, clouds, lights by day and night, cloud formations.

Bouquets of garden flowers for school and home; arrangement.

GRADE II.—

READING AND LITERATURE

(a) Phonic and phrase drills (monthly).

(b) **Reading—**

- (1) The Fisherman and His Wife.
- (2) The Goose that Laid the Golden Egg.
- (3) The Mouse and the Lion.
- (4) Supplementary Reader.

(c) **Literature and Memorization—**

- (1) The Swing.
- (2) Boats Sail on the Rivers.

(d) **Stories for Telling—**

- (1) Epaminondas.
- (2) The Shoemaker and the Elves.

LANGUAGE AND COMPOSITION

A. Suggested oral topics—

Fun I Had in the Holidays.

Wild Flowers Still in Bloom.

Our Garden.

The Wheat.

Review the use of saw, did, isn't, didn't, wasn't.

B. Review and give daily practice in the single written sentence, drilling on capitals and periods.

C. Vocabulary building—Review ee, oo, sh, nk, ng, ck, ch, and tch.

SPELLING

September to December—

Teach the words from the first term list in the Course of Studies, taking four or five words a day, according to difficulty, for the first four days of the week. On Friday review the words studied that week. Teach two or three phonic families a week. The following list is suggested:

at	en	od	ee	ay	wa
an	ed	op	oo	ou (out)	ew
ad	end	ut	old	or	ow (window)
ap	est	un	ow (cow)	ch	ce (nice)
am	it	up	ck	ar	er
and	in	ind	ea (read)	oa (coat)	ir
ast	ip	ild	sh	ai	ur
et	ot				

An alternative suggestion is to spend the entire month of September on phonic families, starting in October with the words from the list, and continuing phonic spelling.

CITIZENSHIP

First Week—Salutations to teacher and other pupils. Group conduct; taking proper turn in speech and action; courtesy to others; quiet speech and natural movement in the school.

Second Week—Care of own desk and contents, cloakroom, seat work and general materials. Emphasize order. Places for things known and kept by pupils. Impress need for co-operation if room is to be kept in proper manner. Conversations on order at home.

Third Week—Procedure when visitors enter the room. Assembly and dismissal. Saluting the flag. Conduct in halls and basement of school. Courtesy to other teachers.

Fourth Week—Discussions of games. Behaviour in playground. Conduct towards others. Sharing equipment and leadership in games. Arouse interest in keeping grounds tidy.

ARITHMETIC

Review Grade I work, carrying addition into the tens, twenties, and thirties.

6 7 8 9

Combinations and separations: 6 7 8 9

Daily drill on rapid addition in single columns whose answers shall not exceed 39.

Counting from 100 to 150 by 1's.

Much oral work in adding given daily.

Use of signs +, — and =.

NATURE STUDY**Autumn—**

1. Talks based on out-of-door, holiday experiences of children. E.g., Lakes, Mountains, Summer Resorts, The Country.

2. General observation study of the names and characteristics of at least five blooming autumn plants. E.g., Goldenrod, painted cup, aster, sunflower, fireweed.

3. Make a collection of seeds from five different kinds of plants. These should be preserved in envelopes or vials for future use.

4. The Moon—new moon, full moon, old moon. Have children draw and color pictures.

The position of the sun at nine, four and twelve.

PHYSIOLOGY AND HYGIENE**Second Week—**

- Health (a) What it means to be healthy at work, at play, at home or in school.
- (b) Necessity of forming good health habits—as eating of proper foods, keeping clean, taking proper rest, outdoor play.

Third Week—

- Weight (a) Talk on proper diet.
- (b) Why a child is underweight.
- (c) How to remedy it.

Fourth Week—

- What we can do to have good health:
 - (a) Drink plenty of milk and water.
 - (b) Eat fresh fruit and vegetables.
 - (c) Get sufficient rest and sleep.
 - (d) Get plenty of outdoor play.
 - (e) Wear suitable clothing.

GRADE III. —**LITERATURE****Silent—**

Weighing an Elephant.
The Sunflower.

Oral—

Belling the Cat.
Farewell to the Farm.
Alice in Wonderland.

Story Telling—

The Frog Prince.

Memory—

The Elf and the Dormouse.
The Goldenrod.
The Maple.

Dramatization—

The Elf and the Dormouse.

COMPOSITION

- (a) Oral—What I Do On Saturday: Rules for Politeness; When I Grow Up; Good-bye Summer; My Pet.

- (b) Formal—Review use of capitals. Review statement and question with punctuation. Oral and written drill on use of *a* and *an*; *is* and *are*; *saw* and *seen*; *did* and *done*.

SPELLING**First Term—**

First two weeks in September—Review Grade II Spelling, paying attention to difficult words only.

Last two weeks of September and October—Teach words assigned for the first term.

November and December—Supplementary list to the end of words of 1.6 value.

Review all words taught during the fall term. Keep a record of the words the class find difficult, in order to review in May or June.

CITIZENSHIP**Form Safety Club.****Rules—**

- (a) Why we have them—what would happen without them—obedience and respect to authority—parents, teachers, city officials, etc.
- (b) Street Rules: Right and left side—crossing corners (refer to pledge cards of Board of Trade).
- (c) Stories:
 - 1. Wise Men of Gotham.
 - 2. First Goldenrod—Children's Hour.
 - 3. The Bell of Justice.
 - 4. Dr. Wilfred T. Grenfell.

ARITHMETIC

1. Review combinations and separations to 20.
2. Drill on 3 and 4 column addition. No carrying figures to be put down.
3. Teach borrowing in subtraction. Do not allow child to use borrowing figures on book.
4. Review Arabic notation to 1,000 and Roman Notation to 12, and practise changing figures to words and vice versa.
5. Counting by 10's, 5's and 2's.

NATURE STUDY

See Course of Studies, pp. 19-23.

Additional Suggestions:**Seed Dissemination—maple.**

—dandelions, asters, thistles, gold-enrods.

—burrs, spear-grass.

Collections showing root, flower, seed.

Flowers—Dandelion, hare-bell, goldenrod, wild aster, black-eyed Susans, thistle, Indian paint-brush.

HYGIENE

The Home—cheerfulness, kindness. A child's part in the hygiene of the home.

Personal cleanliness at home and school.

GRADE IV.—**LITERATURE****Silent Reading—**

The Three Minstrels.
Tom, the Water-Baby.

Oral Reading—

Shoemaker and the Elves.
Walrus and Carpenter.

Literature—

Golden Windows.
Fairies of Caldon Low.

Memory Work—

September.
"It was pleasant walking."

Story—

The Death of Baldur.

GRAMMAR AND COMPOSITION

- (a) **Oral**—Three or four distinct simple sentences on a given topic.
- (b) **Written**—Same work as oral, in paragraph form, with attention to indentation, capitals and ending. Encourage fluency.
- (c) **Systematic Corrections**—Use errors in examples. (This will be part of every month's work).

SPELLING

Review Grade III List.
Teach spelling of Memory Work Selections assigned for this month.
Drill class in phonetic words.

CITIZENSHIP AND HISTORY TALKS**September and October—**

Public Safety—Safety First rules for home, school and street (bicycles, autos), fires (forests, prairie, buildings).

Public Health—Red Cross Club may be formed.

Hallowe'en—Conduct towards others in celebration of it.
"Do unto others as you would they should do unto you."
Early Days in Alberta.

ARITHMETIC

Review Grade III work, giving careful attention to combinations and endings as prescribed in Course of Study.
Teach notation to hundreds of thousands.
Stress rapid calculation in the four fundamental processes, but do not sacrifice accuracy for speed.
Teach 11 and 12 Times Tables.

NATURE STUDY**September and October—**

Animals Useful to Man—Domestic: Cow, horse, sheep, pig.

Individual Projects—Collection of seeds.

Collection of leaves. E.g., Balm of Gilead, Manitoba Maple, Russian Poplar, Birch, Fir, Prairie Rose, Wild Currant, Willow.

Correlate Art and Nature Study.

Recognition Study—Ability to recognize the following plants and flowers: Goldenrod, Purple Aster, Bergamont, Fire Weed, Giant Hyssop, Indian Paintbrush, Dahlia, Pansy, Sweet Pea, Aster.

Recognition Study—Ability to recognize weeds common to the locality. E.g., French Weed, Tumbling Mustard, Lamb's Quarters, Shepherd's Purse, False Flax, Russian Thistle, Tumble Weed, Wild Oats, Wild Barley.

Plant bulbs and put in dark place.

Climatic Conditions—Clouds, dew, frost.

Harvesting of Garden Vegetables.

GEOGRAPHY**September and October—**

Topography of the countryside.

Soil—Occupations of people in surrounding country.
Farming and ranching.

Grain—Threshing, elevators, combines.

Winter preparations—E.g., gardens.

Detailed study of: (1) Apples, (2) Grapes.

Globe study—Names of continents, oceans, their relative positions, the use of the flat map.

HYGIENE

The Home—cheerfulness, kindness, sunshine, ventilation, few carpets, airing bed clothes and night-robés, sweeping—with as little dust as possible, dusting cloth moistened with oil or water, washing before touching food.

GRADE V.—**READING AND LITERATURE**

This suggested outline represents the minimum of work.

Oral Reading—
Work or Play.

Memory Work—
Indian Corn Planter. (Canadian Poetry Book).

Silent Reading—
Robinson Crusoe.

Literature—
The Song My Paddle Sings.

Story Telling—
The Frog and the Ox.
The Fox and the Grapes.

SPELLING

Review Grade IV list.
Teach spelling of common words found in Memory Work Selection.
Teach use of apostrophe.

CITIZENSHIP

Self-respect as exhibited in care for his personal appearance, desire to stand well in the opinion of others, pride in carrying through a task with credit.

Stories related to Indian life on the plains before the white man took possession of them—stories of hunting the buffalo, of Indian ceremonies, of hunting, canoeing, migrating.

ARITHMETIC

1. Review work of previous grade.
2. Teach Table of Capacity—Reduction, ascending and descending.
3. Problems on table.

COMPOSITION AND LANGUAGE

The aims in this grade are:

- (a) To teach pupils to recognize the main idea in any group of ideas.
- (b) To teach the simple paragraph.

Since the new work for Grade V is "Paragraph Work" this should be commenced early in the term and continued throughout the year. In September some hero, such as Jason, Roland, etc., should be selected as interesting to the class and suitable alike for paragraph work, teaching of continuity, selecting of interesting matter and the beginning of the word list for the year.

Another important division of this subject is vocabulary work. With this end in view, there should be regular and intelligent use of the dictionary and systematic sentence practice, both oral and written, with words which have created their own interest for children.

In all Oral Composition common errors should be corrected as they occur. Such errors as are given on page 71 of the Course of Studies should also receive attention.

Children should be taught from the first to criticize their own work and should be given some easy standard such as the samples given on page 72 of the Course of Studies.

Oral Composition should occupy about two-thirds of the time and Written Composition the other one-third. In the written paragraph teach indentation and capitalized title. Quotation marks will be required for direct narration in written dramatization.

Owing to the nature of the work, there will be a great similarity each month—the paragraph—but it should increase in difficulty.

For suggested exercises see Course of Studies, Part I, page 70. Also "Learning to Speak and Write," Book II, pages 14-16, 21, 25-15, 26, 30, 34-11, 40-11, 41 to 43, 44-1, 45-4, 47-2, 47-7, 48-9, 49 to 51.

GEOGRAPHY

1. **The Earth as a Whole**—Study from the Globe, the Continents and Oceans. Pupils may be able to obtain small globes for their own use.

2. **Barriers to intercommunication**—Land, water and ice.

PHYSIOLOGY AND HYGIENE**The Skeleton**—

1. Importance of skeleton.
2. The skull.
3. The trunk.
4. The limbs.

GRADE VI.—**READING AND LITERATURE****Literature**—

The Wrestling Match.

The Maple.

Memorization—

Choice of:
O Canada!
Twilight Song.
Last Rose of Summer.
After the War.

Oral Reading—

The Wrestling Match.

Silent Reading—

Gulliver in Giant Land.
Tecumseh and the Eagles.

Story Telling—

Perseus.

COMPOSITION**Paragraphs—**

Oral and written.

- (a) Thought work and judging—Text, page 56.
- (b) Paragraph structure. Topic—topic sentence, etc.

Special attention paid to length of paragraphs—about six sentences.

GRAMMAR OUTLINE**The Sentence—**

Suggested exercises:

- (1) Distinguish a sentence from a group of words.
- (2) Combination of simple sentences.
- (3) Kinds of sentences—Statement, Question, Command, Exclamation.

HISTORY AND CIVICS**Early Mediaeval Times—**

Saxon Times—Picture the village life, surrounded by farm lands and waste grounds, etc. Each rural community sufficient for its simple needs. The abbey or monastery the centre of such culture as there was. Relate in story form, linking up community conditions with the child life of the period.

King Alfred—The country ravished, almost conquered by the Danes. Their defeat and peaceful settlement. Alfred's attention to his people's needs:

- (a) Defence—Fleet of ships.
- (b) Education—Schools, books translated into the language of the people, forming the beginning of English History, of English Literature and the nucleus of a library.
- (c) Justice to the poor.
- (d) Alfred—the ideal citizen—seeks not personal power by extension of his domain through conquest, but devotes himself unreservedly to the welfare of his people of Wessex. The stories told indicate a character wise, practical, gifted in music and song, friendly, good-humored and with much personal charm.

Harold—The Last of the Saxons—His vigor in suppressing his brother's revolt. His able defence of his realm. (Battle of Hastings).

Canute—Read Chapter VI—"The Story of the British People." **The Vikings**—Read, in Green's "History of the English People," the letter which Canute wrote after 12 years of rule, to his English subjects. "Canute's one rule was to win the love of his people." Contact with his other kingdoms brought England more into touch with continental countries, hence progress in trade and industry.

Hereward the Wake—The Champion of the Saxons against the Norman Conqueror. His title—The Wake—significant. His giant strength. His dauntless daring—legendary stories to illustrate. Ely.

SPELLING

- (a) Review difficult words of Grade V and Grade VI.
- (b) 65 words—first term—"afterwards" to "instead"—(Course).

ARITHMETIC

Review definite number facts taken in preceding grades; also Bills and Accounts.

GEOGRAPHY

Special emphasis should be placed on Canada.

September and First Two Weeks of October—**General—**

Motions of earth and moon.

North America—

See page 41 of Course of Studies.

NATURE STUDY**September and October—**

1. Collection of one group or one project as in Course of Studies, Part II, page 32.

2. Detailed study of two of the following fall plants: Goldenrod, Aster, Sunflower, Tumbling Mustard, Sweet Pea.

3. One of these birds: Prairie Chicken, Duck, Hawk, Flicker.

4. One animal: e.g., Weasel, Fox or Muskrat.

HYGIENE

Review Grade V Hygiene.

GRADE VII.—**READING AND LITERATURE****Literature—**

All Else in the World.

Supplementary Reading—Treasure Island.

Oral Reading—

Little Gavroche.

Memory Work—

A Hymn for Canada.

Silent Reading—

For the Love of a Man.

LANGUAGE AND COMPOSITION**1. Business Letters—two types—**

e.g., Arrange for a baseball game.

Notify post office of change of address.

2. The Sentence—

Aim to establish the "Sentence Sense" and to add interest and variety by enlarging the sentence with the aid of sentence-helpers such as "when," "which," "who" and "that." These may later be correlated with the grammar course, when studying the complex sentence.

3. The Paragraph—

Study one of the arrangements of sentences discussed in "Learning to Speak and Write" (pages 111-113). Find examples of this arrangement in the readers and elsewhere. Assemble original sentences and arrange them.

GRAMMAR OUTLINE**Study of Simple Sentences—**

(1) Definition.

(2) Kinds: Assertive, Interrogative, Imperative.

SPELLING

- (a) Review difficult words of Grade V and Grade VI.
- (b) Words from Memory Work.

HISTORY AND CIVICS**Feudal England—1066-1485—**

- (a) Anglo-Saxon and Norman feudalism.
- (b) Events leading up to Peasants' Revolt.
- (c) Towns—origin and rise to self-government.
- (d) Guilds—development of, and control by.
- (e) Abuses in Mediaeval Church—John Wyclif.

ARITHMETIC

Review of Grade VI work.

PHYSIOLOGY AND HYGIENE**The Nervous System—**

(a) No attempt should be made to teach the structure or detailed function of the parts of the nervous system other than that the body actions and reactions are controlled by the brain, the spinal cord and the nerves. It is important to teach care, in order to have a healthy, well-controlled nervous system.

(b) *Care of this system*—The importance of sleep in resting this system, the value of rest periods during the day, the need of a change of work during the day, the importance of fresh air in aiding nerve control; cultivating a peaceful frame of mind and happiness; learning not to worry over trivial things; the effect of great excitement, emotion or shock; the meaning of a nervous breakdown, when control is lost through worry, loss of sleep, fatigue, etc.

(c) Madame Cure.

GEOGRAPHY OUTLINE

Review of South America, and basic climatic conditions.

AGRICULTURE**September to November 30th—**

Part I in Course of Studies—(pages 1-66 in Text).

Classroom Hints**STARTING RIGHT**

Your school may have ample equipment, or it may have the bare minimum—perhaps less even than that. However well stocked your shelves may be, or however destitute, there is one line of equipment that will count for more than the state of your cupboards and even than the quality of your intellectual gifts, and that is a good equipment of ideals.

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We tried last year to suggest a few themes which might be employed at the commencement of the year with a view to establishing sound working ideals for the year. They were: self-help, the opportunity of the *present* moment, and co-operation of the pupil with the teacher.

Here are a few more such themes set down at random in the hope that they may be expanded into tactful and inspiring three-minute talks which will help in starting the year right.

"It takes a hundred years to grow an oak tree, and only three weeks to grow a squash. But who would want to be a squash?" A lesson in steady, patient growth continuing through the years, and producing at length a manhood or womanhood which can withstand the heat and cold and the winds of adversity; giving shelter to weaker things, enriching the world with strong and enduring deeds, and making the world more beautiful while it lives. How to strike deep, strong roots so that we may be as the oak.

"There is always room at the top." This does not mean that the way to attain to success in life is by beating your companions in a mad, trampling struggle for the best place. It is simply a statement of the bare fact that there are in the world a vast number of people who can do an easy job badly, a smaller but still numerous group who can do an easy job well, a small number who can do a hard job well, and a very small number who can do a hard job excellently. The first group and the second group have to scramble for a living, the third group are more fortunate while the fourth group is so small that it cannot do all the work that is waiting for it. How should a child at school prepare himself for the upper groups? By practising doing hard jobs well until he can do them excellently.

"We build the ladder by which we rise." No matter how rich we may be born—no matter how fine a farm or how big a business Dad may have waiting for us to manage, we shall have to *climb* to success and happiness in life. Perhaps the commonest mistakes that young people make in starting life are: first, thinking that they can rise on the ladder Dad has built, and secondly, thinking they can ride without a ladder at all. The boy sees his father living cheerfully from day to day, apparently never rushed, spending a good deal of time on things that seem easy and even idle; and the boy thinks to himself "Dad's job is a snap." He forgets that in the years gone by Dad was building his ladder—a ladder made of industrious habits, training in using his head, training in doing a job so well that it would not have to be done again. That is why Dad's job seems so easy. But if the boy thinks he can take over Dad's job without building his own ladder, he is woefully mistaken. He will soon find himself tired and discouraged, his head perplexed with problems, and himself surrounded with badly-done jobs that have to be patched up or done over again. If you want to rise to prosperity and happiness in the world you must build the ladder by which to rise—and your school training is your chance to build it.

For your own guidance, remember that you are training children not merely to fit nicely and politely into the school system and to do you credit by their examination marks; you are training them for useful and competent living in the world. Your teaching of Arithmetic, History, Geography, Literature, Composition and the rest are going to enrich the pupil's life thirty years from now, if you keep thinking of his life's needs while you teach.

CURRENT EVENTS

These notes are written during the early summer before the Provincial and Federal Elections, and so do not contain the results of these two important events. With respect to the Provincial Election, the following information should be gathered by the older pupils and entered inside the cover of the Citizenship texts:

Standing of parties in new Legislature—U.F.A., Labor....., Liberal....., Conservative....., Independent.....

What parties have gained strength?

Who are the Ministers in the new Government?

What changes are there in the Government? Who is in charge of the Department of Natural Resources?

Note special Fall session, if any.

A similar study may be made of the Federal Election. If there is a significant change of party power in any section of the Dominion (*e.g.*, Conservative gain in the Prairie provinces), notice should be taken of it. Since the Dominion is governed under the party system, it is important that chil-

dren should acquire some familiarity with the names of the parties and their leaders so as to have at least a nucleus for the growth of their political knowledge. Otherwise there is a danger in rural Alberta, where the U.F.A. is apparently dominant, that the power of the traditional parties in the wider field of Canadian politics may be ignored, or, worse still, condemned without knowledge.

* * * * *

During the early months of this year, the Canadian Wheat Pool was in serious difficulty because it had still an enormous quantity of wheat to sell, and the world price of wheat was steadily sinking. The Pool had already paid the farmers a certain price per bushel for this wheat; if they allowed the price to go on falling without selling, what might happen? If they tried to sell a large amount of the wheat they had, what would happen? . . . What success has the Pool had in disposing of its supplies of wheat? How much of last year's harvest remains to be sold? What sort of wheat harvest have we this year, and how is it affecting prices? (This is one of the most important topics in western history. If the Wheat Pool fails to sustain wheat prices through its policy of orderly marketing, prairie farmers will have to make great changes in their farming in order to make a living.)

GRADES V AND VI.—

COMPOSITION

(A series of ten one-page outlines will be presented during the year. Special attention will be given to the correlation of Composition with other subjects; the assumption will be that we are writing for the teacher of the ungraded school, and that she has Grades V and VI combined not only for Composition, but also for Literature, Citizenship, Geography, Physiology and Hygiene, and Nature Study.)

Thought Work

What is the central idea in each of the following paragraphs selected from the Fifth Reader?

1. Page 32. "It would make the reader pity me"
2. Page 19. "The waiter certainly got most"
3. Page 25. "What a hardy set of men they were"
4. Page 44. "Tom appeared on the sidewalk"
5. Page 295. "The feast which was then spread"
6. Page 326. "Amid such surroundings"

Gather together six interesting thoughts to make up a paragraph on each of the following topics:

1. A Spoiled Picnic Spot.
2. Crusoe's Flour Mill.
3. The Heron.
4. The Indians on the Plains.
5. King Alfred.
6. The Muskrat.
7. A Healthy Home.
8. Orlando's Victory.

In the following topics select and arrange the thoughts presented:

A. The Heron

The heron lives chiefly on berries (false). The heron is not very commonly seen in Alberta. It has a very long neck, a small head and a long, pointed beak. It is to be found along the shores of lakes and the banks of rivers. The heron moves its wings very slowly in flight, and curves its long neck back against its body. It is light grey in color. Its long neck and beak are useful for catching its food in the water. The heron has very large wings. A duck's wings are not very large. When the heron stands among the reeds it looks like a dead stick with the bark stripped off.

B. The Importance of the Skeleton

The muscles with which we move and work are attached to the skeleton. Our muscles grow strong if we take proper exercise. Many of the bones of the skeleton protect vital parts of the body. A whale has a skeleton. It lives in the Arctic and Antarctic Oceans. The skull forms a very strong cover for the brain, and the ribs protect the heart and lungs. If we had no skeleton we could not stand upright or lift heavy things. We could only crawl along like worms. The skeleton lasts long after the rest of the body is turned into soil.

C. Tecumseh and the Eagles

Tecumseh fought for the Canadians in the war of 1812. He was an Indian chief of the Shawnee tribe. Tecumseh noticed how the eagles kept constant guard over their nests in the mountain crags. He was very angry because the American settlers were crowding into the Indian lands and turning them into farms. He was the greatest leader the

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"I saw your name in the A.T.A."

Red Men ever had. Tecumseh noticed how swiftly the eagles struck to kill any bird or animal that molested their nests. He tried to persuade the Indian tribes to be always watchful like the eagles. The Indians were too lazy and the white men were too powerful for them to drive out. Tecumseh also tried to persuade the tribes to band together loyally into one nation to protect and help each other. The Indians lost their lands and homes, but the eagles are still safe in their mountain eyries.

Vocabulary Work

"Teach regular vocabulary lessons"—C. of S., I., p. 71. One convenient and systematic way of doing this is to select a series of topics with which a growing child ought to be acquiring familiarity, and make a list of the names associated with each, e.g.:

Airplane: Aeroplane (airplane), aviator, propellor, hangar, aerodrome, airship, dirigible, airmast, glider.

Automobile: Radiator, differential, sparkplug, cylinders, batteries, carburetor, brakes, valves, etc.

Flower: Calyx, corolla, sepals, petals, stamen, pistil, pollen, etc.

Land features: Isthmus, peninsula, continent, island, plateau, beach, frontier, archipelago, muskeg, tundra, etc.

Parts of ship: Bow, stern, rudder, decks, hold, propellers, bridge, portholes, aerial, anchor, etc.

Another plan is to make groups of adjectives descriptive of appearance or quality, e.g.:

Physical build: Sturdy, stalwart, rugged, slender, slim, gigantic, portly, lanky, etc.

Facial appearance: Ruddy, pallid, wan, chubby, careworn, furrowed, jovial, uncouth, dour, etc.

Appearance of a building: Dilapidated, prosperous, neglected, secluded, deserted, forbidding, etc.

Another plan is to make a column of nouns and a jumbled column of descriptive adjectives which the pupils must match with the aid of the dictionary.

fumes	infamous
victuals	aquiline
crimes	limpid
brook	boisterous
assistance	wholesome
waves	arid
mansion	timely
desert	mortal
wound	acrid
nose	opulent

Sentence Practice (Oral)

This should be carried into all subjects where the mastery of information is the major job. Try this out and see how it works.

1. While the class is studying an assignment in, say, geography, sit down and write out on slips of paper or cards enough questions to pass one each to the pupils (or have these as part of your permanent equipment). At the end of the study period pass them round in a cap, taking one yourself. Show them how they are to answer, thus: "The question reads, 'At what points do the Transcontinental Railways pass through the Rockies? . . . (Pause) . . . The Canadian Pacific line goes through the Kicking Horse Pass, and the Canadian National line goes through the Yellowhead Pass.' Let each pupil in turn read and answer his question; encourage him to "put it across" to the class—they will be eager to know what sort of a teaser he has met, and how he will deal with it. Try to slip out from between the pupil and his audience by saying as little as possible yourself and insisting that the speaker face his companions. When the whole class has answered, collect the questions for filing. The same device can, of course, be employed in History, Nature Study, Hygiene and Literature, and is likely to be a very desirable substitute for some of the written answers which are scribbled down and, owing to the pressure of the job, never surveyed.

2. In the actual Composition lesson pass out a number of the question slips ranging over all the above named subjects which so far have been covered. (Better still, pass them out overnight and have the pupils prepare them for homework.) Call upon them in turn to answer in the proper form, i.e., read the question and give a good sentence in reply. Let them understand that they are free to choose those which they can answer best—it will give them confidence and pleasure. If

necessary, allow them at first to have the written answer before them; then have them reduce this aid to a word or short phrase; then have them rely upon their heads. Try to develop the true forum atmosphere by saying as little as possible yourself. You may even allow the best performer to call on the pupils himself, drawing their names at random.

After the procedure has begun to work smoothly, place on the blackboard the self-criticism questions (C. of S., I., p. 71)—

1. Did you stand naturally? Did you speak slowly?
2. Did you pronounce each word correctly?
3. Could everyone hear each word?

This should not be done too soon. You have the whole year in which to develop good oral performance, and the hardest part of the work is to beguile the child into feeling happy on his feet shouldering a little responsibility. Until that is achieved, keep your pedagogical finger out of the pie as much as possible.

NOTE.—This form of Oral Composition lends itself to fairly large grouping. Grades V to VIII may be combined to advantage (better audience and saving of teacher's time). The higher grades can be given topic assignments requiring a short paragraph answer.

GRADE VI.—

LITERATURE

(Throughout the coming year we shall devote a page each month to the Literature course for Grade VI, with a view to giving you in this way a complete guide to the inspirational and interpretative side of the subject. We shall not give annotations such as are contained in the official Manual to the Canadian Readers—at least if we do it will be involuntarily. Nor shall we confine our study necessarily to selections listed in the Course of Studies, which are only intended to be suggestive. The following selections were treated last year in the T.H.D.: Sennacherib, Doubting Castle, Oliver Cromwell at Home, William Tell, Marmion and Douglas. The articles on these will not be reissued unless by special request.)

THE WRESTLING MATCH

"Every good story has a setting, action which develops towards a climax, and a definite conclusion." (C. of S., I., p. 34.)

The Setting—A famous wrestler has come to the palace of the Duke Frederick and has challenged any man in the countryside to wrestle with him. So far, three young men have answered his challenge and the mighty Charles has thrown them all so hard that they are likely to die. Now young Orlando, a lad not yet grown to full manhood, has come to wrestle; and it seems a great pity that he should throw away his life in such an unfair combat.

The Action—

1. The Princesses Try to Dissuade Orlando.

On reading the Duke's first words, what do you suppose he has just been doing? Has he been successful? (No.) What new way does he try to dissuade Orlando from the wrestling match? Why does he say, "I'll not be by"?

Orlando's first words show that he is a well-mannered young fellow, not just a rough bully trying to "show off." He says in effect: "I will come respectfully and obediently."

What does Celia mean by the "cruel proof of this man's strength"? (Who is "this man," and what were the proofs?) She tells Orlando he should use his eyes and his common sense, i.e., his judgment. What would his eyes tell him, and what would his common sense tell him?

How does Rosalind propose to save him from "backing out" of the match? Would he have liked to go to the Duke and say that he was not going to fight after all? Why not? (Other young men would have poked fun at him for being a cowardly bluffer). Make it quite clear that Orlando would not be at all disgraced if the Duke forbade the match at the ladies' request.

What does Orlando's reply tell us about him? (That he is very poor, downcast and lonely). Mention here, briefly, that his parents are dead and that his older brother Oliver, who should be taking care of him and giving him a proper home and education, is treating him very unkindly.

2. The Match Itself—

The great Charles only speaks twice, both times boastfully. Why does he think there will not be more than one "fall"? Orlando each time replies quietly and with good temper. When the "fall" is over, the big boaster has all the boasting jolted out of him, while the quiet, gentle Orlando wants more wrestling: "I am not yet well breathed" (I have hardly "got going").

As Charles is carried away unconscious, the Duke asks Orlando who he is. Why is he displeased by the lad's reply? At this point tell the class that Duke Frederick was not really the Duke, but had wickedly raised an army and driven the rightful Duke out of his country; and that Orlando's father had done his best to help the former Duke. Also explain Rosalind's position.

Conclusion—

The Princesses are very sorry that Orlando has been dismissed so ungraciously by the Duke, and try to make him feel better. Which one is it that speaks to him first? Why does Rosalind feel so kindly towards Orlando? How does she show that kindly feeling? Notice that the ladies turn and go away after Celia has said "Fare you well, fair gentleman." What has Orlando said to them for the kind words and the kind gift? Nothing at all, though we know that he is a courteous young man. Why is he so dumb before the Princesses?

As he stands there scolding himself for his bad manners, Rosalind thinks, or pretends to think, that he is speaking to them, and makes the excuse to turn back and talk to him again. The fact is that she loves him almost at first sight for his fine courage and strength and because he is the son of faithful old Sir Roland. She cannot tell him so outright, but she means as much when she says: "Sir, you have wrestled well, and overthrown more than your enemies." She means: "You have also conquered and won my heart."

If the presentation of this selection wins the interest and curiosity of the class, you should certainly follow it up by reading to them the whole story from Lamb's Tales, either in the next two or three periods or on Friday afternoon. The study of a good literary selection should be, above all, the avenue to the reading of more good literature.

The Oral Reading side of this study should, of course, take the form of dramatization; and great care should be taken to carry out the movements of approach and departure across stage so that the full sense of the text will be clear. E.g., after "Exeunt Duke Frederick, etc." Orlando stands looking gloomily after the Duke while the Princesses are talking, several paces away. He speaks his lines, "I am more proud . . ." to the retiring party, not to the Princesses. Presently Celia takes Rosalind's hand and leads her over to Orlando, who up to that point had not noticed that they were still there.

TECUMSEH AND THE EAGLES

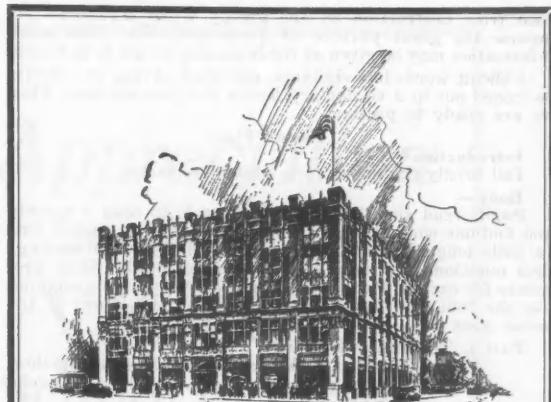
(Silent Reading)

A Silent Reading assignment is, of course, intended to practise the pupil in the habit of gathering content as he reads. He is required to take his attention away from the mechanics of reading, and to get along without saying the words to himself; he is to "get" what is in the selection at the first perusal.

Putting ourselves in the place of a Grade VI pupil for a moment we can readily see that he is going to meet at least two obstacles in the very first stanza, which will prevent him from getting any sense out of it.

1. Tecumseh of the Shawnees means nothing to him—it might as well be Tarzan of the Apes.
2. There are several words which are not within the ordinary recognition vocabulary of the class, e.g., league, supreme, maintain, pact.

It will be necessary therefore to explain to the class enough about Tecumseh to enable them to start reading with their "feet on the ground." Tecumseh was a great Indian chief who led the Shawnee tribe early last century, at a time when the Indians were being slowly pushed out of their lands to the south of the Great Lakes by the westward expansion of the Americans. Their forests were being cut down, their plains were being ploughed and fenced, their hunting grounds and fur-trapping places were overrun by white men. Tecumseh was furious, like many more of the Indians, at seeing all he possessed stolen under his nose. To save his



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race from destruction by the greedy white invaders—this became the great purpose of Tecumseh's life. This much information may be given at the beginning of the S. R. lesson.

Difficult words like vigilance, patrolled, eyries, etc., should be ironed out in a vocabulary lesson the previous day. Then we are ready to proceed.

Lesson Plans

Introduction—

Tell briefly the above facts about Tecumseh.

Body—

Pupils read silently Part I, being told to read it quickly and find out what it says. Teacher gives only a limited time (a little longer than she requires herself) for the reading; then questions the class to elicit the essentials. Same procedure for each of Parts II, III and IV. An outline something like the following may be worked out on the Board as the lesson goes on:

Part I. Tecumseh's plan was:

- (a) That the Indian tribes should league together.
- (b) That they should swear to help and defend each other.

Part II. Tecumseh learned his plan from the eagles. He saw that the eagles protected their homes by:

- (a) Guarding them carefully from earliest dawn to dark.
- (b) Flying far and wide over the country to see that no enemies came nigh.
- (c) Striking swiftly and hard any foe that did come.

Part III. Tecumseh failed to save his people from destruction because:

- (a) He had not enough faithful followers.
- (b) The tribes would not hold together loyally as he wished.

Part IV. The eagles still live on their mountain crags, because they have kept their watch and struck fearlessly at their foes. In the lands beneath them now live men of another race. They, too, must heed the lesson of the eagles, and guard their freedom.

Conclusion—

Tecumseh's Indians lost their homes, their freedom and all, because they were not loyal to each other and were not watchful against their foes.

We are Canadians; we have lands, homes and freedom. If we are to keep them we must be LOYAL to each other and to our country, and WATCHFUL against our foes.

GRADES VII. AND VIII.—

UNDERSTANDING DECIMALS

1. Draw roughly seven round cakes. Indicate how much is .75 of the first one, then in order .5, .33, .25, .875, .66, and .375 of the other cakes.
2. Draw a rectangle $2\frac{1}{2}$ by 2 inches. Shade a part equal to .2 of the rectangle.
3. What sorts of common fractions can be expressed exactly as decimals? (Only those with denominators whose prime factors are twos and fives).
4. How would you multiply a decimal very quickly by 1,000? How would you divide it very quickly by 100?
5. Draw a rough sketch to show how many hundredths there are in .3 of a square cake.
6. Mark off what you think is about .49 of the front chalk rail. (An evident attempt to guess one-half and then a tiny bit less should be accepted.)
7. Similar exercises with .77, .24, .53, .19, .35, .65 and .61 of the chalk rail.
8. By multiplying, you find that .25 of .25 is .0625. Using a sketch of a round pie show what common fraction .0625 is equal to. Verify this by the canceling method.
9. How would you express in decimals one-half of one-tenth of a mile? One-quarter of one-hundredth of a ton? Three-quarters of one-thousandth of a year?
10. About what answer should you obtain when multiplying 60.312 by .498? (About 30). Similar queries as to $8.03 \times .253$, $14.93 \times .345$, $16.13 \times .742$?

Teachers who are in need of seatwork for the fundamental processes in Arithmetic (and other useful activities of the classroom) are redirected to the T.H.D., October, 1929, article entitled "A Rural Teacher's Equipment for Seat Work."

OUT-OF-DOORS ARITHMETIC

A seasoned School Inspector once said to me: "I am still waiting to meet the school teacher who has actually demonstrated on the school yard that a square rod does consist of $30\frac{1}{4}$ square yards." I was ashamed that I could not then give him a direct introduction to the person he was seeking. How many of your pupils, who have perfectly memorized the above item, can explain how the odd $\frac{1}{4}$ is there—except by a paper calculation of $5\frac{1}{2} \times 5\frac{1}{2}$? It would be well worth while to have the pupils bring to school a quantity of binder twine and a few sharpened pegs, and actually lay them out in the school yard in a square rod to show the 25 square yards, the 10 half-square yards and the one quarter-square yard. A slip-loop can be made and a bit of white rag inserted, to mark off each yard in the twine. Incidentally you can show how to correct the angles of the square by equalizing the diagonals. If you cannot leave the lower and higher grades to work alone in the classroom, send out the pupils concerned to work the thing out themselves.

Similar work should be done with a marked ten-rod line to determine the exact area of the school yard. If there is an irregular piece of pasture or summer-fallow near by, you can send out a party to find its area (by multiplying its length by the average of five distributed cross-measurements). My middle grade pupils spent a busy and profitable morning at that when the seniors were writing the Departmentals, but it is good teaching at any time.

The calculation of the hypotenuse may be similarly verified in the yard. Also, using a seven-foot line with a spike at each end, your pupils can describe a circle large enough to verify the formula, Circumference = $3\frac{1}{7} \times$ Diameter. This demonstration has the obvious advantage of greater accuracy than anything done on the blackboard, and is also on a large enough scale for a group of five or six to be all participating.

What's the use of all this? Simply that it turns the pupils' arithmetic from book words into confirmed fact and lived experience. While there are doubtless many pupils who habitually carry over their learned arithmetic into their environment, it is safe to say that there are very many who do not—and for these it is essential that considerable work with concrete materials and simple home-made instruments should be carried out.

Try this out in your classroom. Ask a Grade VI pupil to show you with his hands a square foot on his desk. Ask another to show you a cubic foot. Ask another to show you a square rod in a corner of the room. If the learning is sound they will be able to do these things with fair accuracy—at least they will not be nonplussed.

Similar work may and should be devised for other kinds of denominate numbers.

Try This One

O is the northeast corner-stake of a section of land, and P is the northwest corner-stake. These are both in low land and there is a considerable hill between. The owner of the section wishes to build a true line fence from one stake to the other. Like a wise man, he erects a long pole crowned with a shiny tin can at each corner; but finds that he cannot see one pole from the other owing to the hill. How is he to stake out his line accurately?

O — (x hill y) — P

(Answer: Somewhere about x let him erect a post at a point where he can see P; and somewhere about y let him erect a post at a point where he can see O. Then it will be possible for him to get O, x and y in a visible true line, and to get x, y and P in a visible true line. And by moving x and y a little either way he can evidently get them into positions which will make both Oxy and xyP true lines at the same time, i.e., OxyP a true line.)

GRADE IX.—

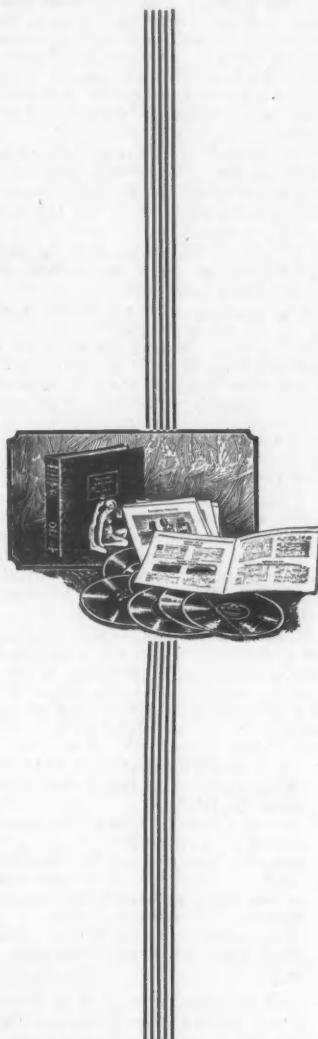
LITERATURE

THE CHRISTMAS CAROL

Let us teachers get this story straight in our own minds before we teach it. My reason for that is, that a number of students, and teachers, do not understand the pattern of the story when they have finished it, as you will agree a little later.

The central character of the Christmas Carol is the villain—Old Scrooge, a dried-out husk of a man in whom love, kindness and neighborly feeling have long since been smothered under the master passion of avarice. One Christmas Eve, his mind, long subject to the rigid control of will to gain, goes off on a wild and splendid jamboree dragging poor Scrooge like a limp rag behind it. His mind wanders

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"I saw your name in the A.T.A."

in the ranges of *memory* over past Christmases—that is his journey with Christmas PAST.

His mind wanders in the fields of *imagination* among the Christmas scenes of today—that is his journey with Christmas PRESENT.

His mind leaps forward in cold, reasoned *prophecy* into a future Christmas—that is his journey with Christmas TO COME.

The accumulation of the sensations through which he passes rekindles in Ebenezer Scrooge the smothered embers of affection, awakes in him a great shame for his present manner of life, and fills him with horror of the end towards which he is moving.

Let this be clear: Christmas PRESENT in this story has no reference to the gifts which we bestow on each other at that season; it means Christmas of today as contrasted with those of the past and of the future. A University Graduate teacher of this province taught through the Grade IX Literature course without ever realizing that simple interpretation.

The Christmas Carol falls obviously into six main parts; once the class is acquainted with the general theme of the Carol, these parts may be studied separately and intensively so as to master the story in each.

I. Scrooge the Misanthrope, seen in his office on Christmas Eve. This part of the story serves to make us very clear as to what manner of man Mr. Scrooge is; to introduce a number of people and situations to which he will have to react again on his journey with Christmas Present, especially Bob Cratchit, who is the very opposite of Scrooge in nature and worldly circumstances; and also to initiate that train of memory which is to bring Marley so visibly before his old partner's eyes. This part of the Carol may be adequately covered by two essays:

- (a) A Peep into the Office of Scrooge and Marley (descriptive, not narrative).
- (b) Scrooge's Character as revealed in his actions on Christmas Eve.

II. The Visit of Marley's Ghost.—This part of the story deserves separate study because it is, unlike the preceding, supernatural in character and definitely progressive narrative. It is, moreover, a very fine piece of humorous and dramatic writing. The following questions suggest important details for study:

- (a) By what minor touches does Dickens prepare the "atmosphere" for the entrance of the supernatural, i.e., the ghost and the spirits?
- (b) What is Scrooge's first attitude towards Marley's ghost? Does his conduct at this stage reflect any credit upon Scrooge? By what means is he reduced to submission?
- (c) Describe the conditions and the activities of Marley's life beyond the grave. What must Scrooge expect when he comes to die?
- (d) What is the real purport of Marley's message to Scrooge?
- (e) What essential contributions does the Scrooge-Marley interview make to the story as a work of art?
- (f) Summarize the interview in about five short phrases—and learn the summary.

On the point (e) we may suggest in passing that it "puts us wise" or gives us inside information about what is going to happen to Scrooge, so that we may watch the minute stages of his reformation intelligently. Also Marley's description of the "business" which he failed to attend to is really a piece of powerful pleading which ranges us all, for the rest of the story, on the side of charity and human kindness.

III. The Journey with Christmas Past.—Here Scrooge sees glimpses of his childhood, his apprenticeship, his courtship, and of the later happiness of a home in which he had no share. Frankly, the childhood scenes are rather mawkish and sentimental, contributing nothing significant to the reconstruction of Scrooge's past except that he once had a dearly loved little sister who is long dead, and whose son he has deliberately alienated. While there may be pathetic interest inherent in a boy left to spend Christmas alone at boarding school, in the indifference of a stern father and the pleadings of a tearful mother, these things are not well integrated in the story of Scrooge's reformation, and we rather suspect that Dickens at this point was just writing "mush for the masses."

- (a) Contrast the behavior of Fezziwig towards his employees with that of Scrooge at the commencement of the Carol.
- (b) Why did Scrooge's lover turn him away, and what blessings of life did he lose in consequence of this?
- (c) At what points in the journey with Christmas Past does Scrooge slip out of his misanthropic character and become human again?
- (d) Summarize with a few phrases this journey—and learn the summary.

IV. The Journey with Christmas Present (i.e. Christmas of Today).—Every scene has force in this journey. Scrooge sees Christmas as it is now in every home but his own—full of mirth, of laughter, of warm hearts and the hand-squeezing of lovers. He hears himself spoken of, and realizes that his name gives rise only to gentle derision or momentary discord. He has no place in the world of happy, laughing, loving people.

- (a) Dramatize (for Friday afternoon or for the Lit.) the nephew's Christmas party.
- (b) Christmas at the Cratchit home (Essay).
- (c) In how many respects can Bob Cratchit be contrasted with Scrooge?
- (d) At what points in his journey with Christmas Present does Scrooge show sympathetic impulses?
- (e) Summary as before.

V. The Journey with Christmas Yet to Come.—In this journey of the mind Scrooge's guide shows him the end towards which he is steering his life. All his shrewd business deals, all his frugality, all his contempt for the foibles and failures of other men will come to ultimate fruition in what? In a meagre naked corpse reft of its garments and covered with a foul sheet too ragged to be worth pilfering. Only two human creatures are profoundly moved by his passing, and for them Scrooge's death is a release from black anxiety and from the threat of destitution.

- (a) What is the state of Scrooge's mind during his journey with the third spirit?
- (b) What events lie in the future for the Cratchit family?
- (c) How does the story emphasize the utter indifference of Scrooge's acquaintances about his death?
- (d) Why do Scrooge's menial employees loathe him so bitterly?

VI. Scrooge Reformed.—Obviously the most pleasing way to develop the idea of Scrooge's spiritual regeneration is to show him reacting in a new way to all the social relations in which he was placed on Christmas Eve. So it will be interesting and useful to make frequent back-reference to the first part of the Carol while reading the story of Scrooge's entrance upon his new life. For every offence in the bad old life there should be atonement in the new. See if there is.

- (a) What evidence is there that Scrooge has acquired a taste for fun?
- (b) How did Scrooge spend Christmas Day? How had he intended to spend it?
- (c) Imagine yourself to be Bob Cratchit telling Mrs. Cratchit about his surprising experience at the office on the morning after Christmas, and write down the conversation between them.
- (d) Summarize in a few phrases this sixth part of the Carol—and learn the summary.

REVIEW—

1. What prominence is given to Scrooge's nephew in the various parts of the Christmas Carol?
2. Describe briefly the personal appearance of the three spirits. How does Dickens make these figures symbolic?
3. Tell the last incident in the journey with Christmas Present. What is the true meaning of this? How is it connected with the rest of the story?
4. What do we see or hear of Tiny Tim in this story?
5. Make a list of the incidents in the journeys in which Scrooge actually hears other people's opinions of himself.
6. How does each of the four ghostly visitors introduce himself into the story?
7. If you were adapting this story for the theatre as a Five Act play, how would you organize it? Make a scheme to show what incidents you would include, and what scenery would be required. (Understand, of course, that it would be unwise to include a very short and unimportant scene requiring elaborate scenery.)



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